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U. S. Department of Agriculture

Monday, June 2,
1930.

YOUR FARM REPORTER AT WASHINGTON

NOT FOR PUBLICATION.

Speaking Time: 10 Minutes.

All Regions.

HOW SCIENCE IS HELPING THE LIVESTOCK INDUSTRY.

OPENING ANNOUNCEMENT: Modern science has done a great deal to help the livestock producer. Your Farm Reporter has been talking with some of Uncle Sam's scientific investigators about science and livestock production. We'll now turn the 'mike' over to the Reporter and let him tell us some of the things he found out from these investigators. All right, Mr. Reporter.

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Well folks, to begin with I'll tell you the story of the lady who brought a sick chicken to the office of the Pathological Division of the United States Bureau of Animal Industry. The chicken was sick---there was no doubting that---and had refused all food---but sick with what?

After extensive examinations by the veterinarian to whom it was submitted, it seemed rather a puzzling case. The Chief of the Pathological Division happened along, and by the way he has been working for Uncle Sam for many years. He suggested to the doctor that he look at the base of the sick chicken's tongue. There he found the trouble, and what do you suppose it was?

It was a piece of ordinary white string looped around the chicken's tongue in such a way that it could not be entirely swallowed, nor ejected from the mouth. After the string was removed, the chicken was a well bird.

Dr. Buckley, the Chief of that Division, said he told me that story to illustrate the value of experience in dealing with livestock troubles. He had seen chickens affected in that manner before, and knew what kind of symptoms a string around the tongue produced. He said that story also illustrated the unusual in livestock troubles, and remarked that it was well to look for these unusuals along with other generally known symptoms.

He cited another instance of a chicken supposedly suffering from coccidiosis with consequent inability to walk. On a subsequent day the chicken submitted for examination was found to be infested with tapeworms, and did not have coccidiosis at all.

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I asked him why he told that story, and he said because people often diagnose livestock ailments and troubles wrongly due to failure to go far enough into the investigation.

Dr Buckley stated that his office received more inquiries about chicken diseases and troubles than about those of any other kind of livestock.

I asked him what chicken troubles prompted the most inquiries and he said chicken pox and roup took first place for chickens in general. For young chickens he said B.W.D. come first and coccidiosis second.

That office also receives a lot of inquiries about cattle troubles and diseases.

I asked, "What are the things people want to know about cattle?" and got the reply that questions about contagious abortion take first place, and inquiries about mastitis and milk fever follow in close order.

At this point in the discussion Dr. Buckley brought out one point that should be of special interest to you people who have occasion to write to the Department of Agriculture or to your state agricultural college for information on livestock diseases. Here it is.

When writing for livestock-disease information, and describing symptoms in your livestock---be sure to describe the case in a clear-cut manner. This will help the veterinarians in finding the trouble.

I'll give you an example. Now get ready for a big word. Here it is. A N-A-P L A S-M O-S I S. That's the name of a blood disease in cattle, and it's serious in some sections of the country.

The Pathological Division of the Bureau of Animal Industry diagnosed a case of anaplasmosis in Florida several years ago. To make this diagnosis it was necessary for a trained veterinarian to make the trip from Washington to Florida and return. About the same time a cattle raiser from a well-known cattle ranch in Oklahoma wrote in describing a peculiar disease affecting his cattle. His description was so clear, so accurate, and so convincing that the bureau men knew immediately that the disease was probably anaplasmosis. Such accurate information enabled the bureau in investigating the outbreak to recognize the disease at once and to advise without hesitancy the nature of the disease and recommend such steps as are helpful in combating the malady.

Dr. Buckley said there are about 15 trained veterinarians working in the Pathological Division of the bureau. These people are working all the time in laboratories and out in the field. They are constantly finding out what causes livestock diseases and what kind of treatment is most effective to remedy various troubles.

The first of these is the fact that the
 number of cases of the disease is increasing
 rapidly.

The second is the fact that the disease is
 spreading to new areas.

The third is the fact that the disease is
 becoming more severe.

The fourth is the fact that the disease is
 becoming more difficult to treat.

The fifth is the fact that the disease is
 becoming more difficult to prevent.

The sixth is the fact that the disease is
 becoming more difficult to control.

The seventh is the fact that the disease is
 becoming more difficult to cure.

The eighth is the fact that the disease is
 becoming more difficult to manage.

The ninth is the fact that the disease is
 becoming more difficult to monitor.
 The tenth is the fact that the disease is
 becoming more difficult to study.
 The eleventh is the fact that the disease is
 becoming more difficult to understand.
 The twelfth is the fact that the disease is
 becoming more difficult to explain.
 The thirteenth is the fact that the disease is
 becoming more difficult to predict.
 The fourteenth is the fact that the disease is
 becoming more difficult to prevent.
 The fifteenth is the fact that the disease is
 becoming more difficult to control.

The sixteenth is the fact that the disease is
 becoming more difficult to cure.
 The seventeenth is the fact that the disease is
 becoming more difficult to manage.
 The eighteenth is the fact that the disease is
 becoming more difficult to monitor.
 The nineteenth is the fact that the disease is
 becoming more difficult to study.
 The twentieth is the fact that the disease is
 becoming more difficult to understand.

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The results of these actual tests and field experiments are put in bulletin form so that your livestock producers throughout the country can write in to the Department of Agriculture in Washington and get accurate, reliable, and practical information on the various livestock diseases.

Suppose you are a chicken raiser. In that case Farmers' Bulletin No. 1337-F, entitled "DISEASES OF POULTRY," should be in your farm library. It contains many pages of information about poultry diseases, and, if properly studied, should enable many poultry raisers to save a larger number of the chicks hatched.

There are a number of bulletins on cattle diseases, and these bulletins should be in the library of every cattle raiser whether he is milking cows near Salt Lake City, or growing beef steers in Ohio.

We still cultivate a lot of land in this country with horses. Horses have various ills, and in some sections diseases differing from other sections. There are bulletins on many of these horse troubles.

There are also bulletins full of practical information on swine diseases, and other bulletins with plenty of material relative to sheep troubles.

It is not always practical to give medical terms and treatments by radio on account of the long words and the necessity for absolute precision in your understanding of the methods of treatment and names of drugs, instruments, etc.

There is, however, a way by which livestock producers throughout the country can take advantage of this vast amount of scientific research work Uncle Sam's veterinarians have done, and are still doing. Your own home veterinarian might be your Moses to lead you out of the wilderness of uncertainty.

Make a note of the publications I am going to mention, write for those of special interest to you. When they come to your library, read them over and acquaint yourself with common livestock diseases and treatments.

There are too many publications to mention them all, so let's just take a few of those that are timely at this season of the year. Ready?

DISEASES OF POULTRY -----Farmers' Bulletin No. 1337-F.
UDDER DISEASES OF DAIRY COWS-----Farmers' Bulletin No. 1422-F.
INFECTIOUS ABORTION OF CATTLE-----Farmers' Bulletin No. 1536-F.
DOURINE OF HORSES -----Farmers' Bulletin No. 1146-F (for West)
DISEASES OF SWINE -----Farmers' Bulletin No. 1244-F.
DISEASES OF SHEEP -----Farmers' Bulletin No. 1155-F.

You can get additional publications on still other livestock diseases by writing to the United States Department of Agriculture, Washington, D. C.

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A stitch in time saves nine in the livestock industry, and it often pays to get the bulletin, and have the information in case it is needed.

Next Monday at this time I'm going to tell you the story of the livestock needle.

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CLOSING ANNOUNCEMENT: You have just listened to one of the regular Farm Reporter programs broadcast from Station _____ in _____ through the cooperation of the United States Department of Agriculture. The Reporter mentioned 6 Department of Agriculture publications. I'll read the list again.

DISEASES OF POULTRY ----- Farmers' Bulletin No. 1337-F.
UDDER DISEASES OF DAIRY COWS ----- Farmers' Bulletin No. 1422-F.
INFECTIOUS ABORTION OF CATTLE ----- Farmers' Bulletin No. 1536-F
DOURINE OF HORSES ----- Farmers' Bulletin No. 1146-F.
DISEASES OF SWINE ----- Farmers' Bulletin No. 1244-F.
DISEASES OF SHEEP ----- Farmers' Bulletin No. 1155-F.

Write this station for copies of those publications you desire for your library.

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1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters α and β . It is shown that the system has solutions for all values of the parameters α and β if the function $f(x)$ is continuous and has a bounded derivative.

2. In the second part of the paper the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has solutions for all values of the parameters α and β if the function $f(x)$ is continuous and has a bounded derivative.

3. In the third part of the paper the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has solutions for all values of the parameters α and β if the function $f(x)$ is continuous and has a bounded derivative.

4. In the fourth part of the paper the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has solutions for all values of the parameters α and β if the function $f(x)$ is continuous and has a bounded derivative.

5. In the fifth part of the paper the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has solutions for all values of the parameters α and β if the function $f(x)$ is continuous and has a bounded derivative.

YOUR FARM REPORTER AT WASHINGTON

Tuesday, June 3, 1930.

Crops and Soils Interview No. 38:

Stored Grain Pests.

ANNOUNCEMENT: Now we will hear from our old friend, Your Farm Reporter at Washington. It is not giving anything away to tell you he has been to the specialists of the United States Department of Agriculture to find out for us how we can keep down insect pests in stored grain. As some of you know from sad experience, this is a highly important question ----- but let's hear from the Farm Reporter on that ----- Well, Mr. Reporter? -----

What can we do about it?

That's the main question. Nearly every farmer knows grain moths and grain weevils do big damage. Taken the country over, the damage runs into millions upon millions of dollars. In Pennsylvania, the Angoumois grain moth alone causes anywhere from one to three million dollars loss. In Alabama, grain weevils cost the farmers four million dollars a year. The losses in corn run anywhere from two per cent of the crop up to seventy-five per cent. Other States tell a similar story.

It isn't so much that farmers don't realize what's happening. In some sections, farmers are so used to having the weevils eat up their corn, they take it as a matter of course. In other sections, farmers are so used to taking a discount on weevil-infested wheat that they are never surprised when it is graded down.

The surprising thing is that so few farmers take the necessary steps to save themselves feed and money. Dr. E. A. Back, in charge of the division of stored-products insects of the United States Department of Agriculture says that grain weevils and grain moths can be controlled. It costs very little to do it. It takes little time or labor. Grain moths and grain weevils are killed off by the same fumigant.

Recently, the Department's Bureau of Entomology has developed a remarkably effective fumigant. By using ethylene oxide with dry ice it has been possible to get a one hundred per cent kill of insects in stored wheat. This new method is, however, adapted for use only in establishments equipped with elevator machinery and preferably in bins holding from fifteen thousand to one hundred thousand bushels.

For the farmer with ordinary storage bins or cribs, the best thing to use is carbon bisulphide. You can get results, first-rate results, with that and save yourself money. It is explosive. Keep fire away from it. That is just a matter of care. There is a Farmers Bulletin will tell you

how to use it. It is called the "Control of Insect Pests in Stored Grain" and is Farmers Bulletin No. 1483-F. Write for it promptly, so you will have it on hand when you need it.

It is good practice to fumigate grain as soon after threshing as possible. By fumigating promptly, you kill off the insects when there are comparatively few of them.

Don't wait until the damage is done. Then it is too late. You see, the Angoumois grain moth and the rice weevil, our two most destructive stored-grain insects, breed right inside the grain. The grubs feed inside the kernels. They are borers from within. You don't see the damage until it is done.

Gassing the grain in a tight crib or bin with carbon bisulphide soon after threshing ~~or~~ harvest is the plan to keep in mind.

In the meantime, better clean up any old grain in the bin. Feed up any corn left in the crib. The rice or black weevil and the Angoumois grain moth live over winter in the grain in the bins. Then they up and fly to the near-by fields of wheat and corn, about the time the corn and wheat are getting ripe.

These stored-grain pests change their forms you see. The Angoumois grain moth, for instance, lays eggs on the kernel of wheat. A tiny little grub hatches from each egg and gnaws its way into the kernel, leaving a hole no bigger than a pin prick.

Once inside, the grub starts feeding and growing, eating the very insides out of the grain of wheat. When it is full grown practically the entire inside of the kernel has been eaten out and the grub is as big as the kernel itself. Then the grub passes into the cocoon stage, in which it slowly changes to a moth. The moth comes out of the hollow-shell of a wheat kernel, pushing a hole through to the outside.

That moth then wings its way to the near-by wheat field and lays eggs upon the wheat heads. That is why it is so important to get rid of that old grain in the bin or crib and so stop the spread ~~at~~ its source.

The story is pretty much the same with those other two important pests, the rice weevil and the granary weevil except that the granary weevil does not fly and is not found in the field. Instead of a delicate moth like the Angoumois grain moth, however, in the case of the adult or spreading stage of the rice weevil or the granary weevil we have to deal with a little hard-shelled bug.

Now, most of us might be inclined to say; "What difference does that make? What do we care whether it is a weevil or a butterfly?" It may make millions of dollars worth of difference to us. The Angoumois grain moth attacks both corn and wheat in the field and in storage. Being a delicate moth, however, it can not spread far into threshed grain in the bin.

The damage it does to standing grain is small. Where it gets in its worst damage, is where the grain is left unthreshed in the shock or in the

now for some time. Each female moth lays several hundred eggs, and it only takes five weeks to develop from egg to adult. To prevent the insects multiplying, it is a good idea to thresh promptly, and to fumigate promptly after the grain is threshed.

Those hard-shelled little beetles, the granary weevil and the rice weevil, are almost identical. They are very close kin, they just operate on a different front. The granary weevil can stand cold better and works the north. The rice weevil flies from old to new wheat except in the northern part of the wheat belt where it doesn't infest either wheat or corn to any considerable extent. Both the rice weevil and the granary weevils are adapted to spreading in the stored grain. Whether they work their way through your grain and rob you of feed or gnaw down the prices you get, is for you to decide. The way to prevent such damage is clear. The method is easy and cheap. It is explained in that Farmers' Bulletin No. 1483-F, which can be had from the United States Department of Agriculture, at Washington, D. C.

ANNOUNCEMENT: The name of that bulletin is "Control of Insect Pests in Stored Grain." It is Farmers' Bulletin No. 1483-F and you can get it either through Station_____ or direct from the U. S. Department of Agriculture. This Station cooperates with the Department in calling your attention to this way to save.

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YOUR FARM REPORTER AT WASHINGTON

Wednesday, June 4, 1930

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

Poultry Interview No. 38: PRODUCING MARKET EGGS OF GOOD QUALITY

ANNOUNCEMENT: And now, ladies and gentlemen, here is Your Farm Reporter at Washington. This is Your Reporter's day with poultry raisers. You'll remember that two weeks ago to-day he talked about grading eggs and about buying and selling on the basis of quality. To-day he follows up that discussion with a look at the other side of the same question. From Mr. A. R. Lee, Department of Agriculture poultry husbandman, he now brings you some tips on producing these eggs which have good market quality. Here he is.....

May I tell you one of my own personal experiences with eggs?

Needless to say, I was brought up on eggs for breakfast. Bacon and eggs for breakfast came just as regularly on our farm as milking time. There's nothing strange about that, of course. In fact the five boys with whom I went to work in the city were brought up on exactly the same diet.

But perhaps the strange part of it is that our fondness for the morning helping of "bacon and" survived our early experiences in the city. Eating around at cheap restaurants because our funds were mighty slim, caused us to avoid eggs. We found we couldn't be sure about the quality of the eggs we got at these restaurants. Our appetites were accustomed to the freshest of fresh eggs, and we didn't want any other kind.

As I say, our liking for eggs was not affected. But I offer this as my testimonial to the importance of putting high-quality eggs on the market. I told Mr. Lee of this experience, and he nodded emphatically.

"That's it exactly," he declared. "You know, and I know, and everybody knows, from our own experience, that people eat a lot more eggs when the eggs they buy are of high quality. That 's why a preponderance of high-grade eggs on the market always tends to stimulate demand and thus to increase prices. And that's why a preponderance of low-grade eggs has just the opposite effect.

"Fortunately, the quality of eggs in the United States has been improving right along in recent years. There's no reason any more for not eating more eggs than many of us do----in fact there's every reason why we should eat more. People who demand high-grade eggs nowadays can be sure to get all they want.

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"And what is the secret of producing fine-quality eggs? "I asked.

"I really don't know any secrets about it, " Mr. Lee replied smilingly. "There's nothing up my sleeve---see for yourself. Producing eggs of high quality is simply a question of three very practical steps; and these are the steps:

"First, collecting the eggs promptly; second, handling them under proper conditions; and third, getting them to the consumer while they're fresh.

"Oh is that all?" I asked.

"Simple, isn't it," said Mr. Lee. "But perhaps not quite so simple as it sounds. There are a few details, and it is the details that count."

"Bring on the details," said I. And he did---so now I'm able to bring them to you.

"Remember," he began" that the value of eggs is affected by their size. Remember also that dirty eggs are poor eggs for market. And remember that in warm weather market eggs should always be infertile. These are some of the main points.

"Only those hens which produce good-sized eggs should be used in the breeding flock," he continued. "Guard against small-sized eggs and take every opportunity to eliminate hens that lay these small eggs. Remember that eggs which weigh less than 22 ounces to the dozen are poor market eggs. To producers I'd suggest that they use their small eggs at home, since a few small eggs tend to lower the value of an entire shipment. wherever eggs are bought on the basis of grade.

"And another thing. Remember that healthy, vigorous hens of a standard variety not only lay more eggs than mongrel hens, but their eggs are larger and more uniform in color and appearance. Remember that uniformity in color and appearance adds much to the value of market eggs.

"Now about dirty eggs. In the first place, bear in mind that the hen always lays a clean egg. A dirty egg, therefore, is the result of a dirty nest or dirty feet of the hen. Keeping eggs clean is entirely a mechanical proposition, and it is largely up to the poultry raiser. A hen, you know, does not enjoy filth and dirt, and she can usually be depended upon to do her part toward keeping eggs clean if she gets a little cooperation.

"What can the poultry raiser do? I inquired.

"Well, I'd recommend in the first place," he replied," that he provide one nest for every 4 or 5 hens and keep plenty of clean straw in the nests. He might also add sawdust or shavings to the straw---this helps to promote cleanliness. Clean eggs, of course, can be produced only in a clean house. Clean floors and clean yards are both highly important. And of course clean litter goes along with clean floors. In very wet weather hens may be kept

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confined to the house until noon to prevent mud being tracked into the nests. And one other good practice is to nail three-quarter-inch-mesh wire netting on the underside of the roosts. This prevents the hens from getting into the droppings.

I asked Mr. Lee if he recommended washing dirty eggs.

He replied that he did--with reservations. "Washed eggs spoil more quickly than dirty eggs and washed eggs do not keep so well in storage," he told me. "However, washed eggs will bring better prices than dirty ones, so I'd say that all dirty eggs should be cleaned. Clean them with a damp cloth, and rub them first as little as possible. And also be sure that the eggs are thoroughly dry before you pack them into a crate."

"Now in the summer time, we run into a special problem. Eggs deteriorate quickly in hot weather. They must be gathered at least twice a day and then kept in cool, well-ventilated places. Nests get pretty warm on summer days and eggs are also heated by other hens that come into the nest to lay. Promptness in removing broody hens from nests helps to produce better eggs.

"And, furthermore, eggs need to be kept where the air is moderately dry as well as cool. Dampness tends to cause eggs to mold. A cool pantry or a well-ventilated cellar or cave is usually the best place for eggs until they are marketed.

"Remember also, to keep eggs away from odors. They will absorb the odor of oils and onions and other such volatile substances.

"And now we come to the question of producing infertile eggs, and this is also especially important at this time of year. Of course, to produce infertile eggs the roosters must be kept out of the flock."

"What do you do with the roosters?" I wanted to know.

"Sell them, eat them, or confine them as soon as you need no more eggs for hatching purposes," came the reply. As a matter of fact, there is such a tendency to buy day-old chicks that many farmers do not need to keep roosters in their flocks at any time. And then, don't fail to get rid of your cockerels. Selling the young cockerels as soon as they reach broiler age helps in producing infertile eggs in the late summer and early fall.

He concluded with this statement: "There is nothing that will improve the quality of summer eggs to a greater extent than the production of infertile eggs."

Now, these are the most important details affecting quality, but of course they aren't the only ones. Feeding, for instance is another important consideration. Hens need grain at all seasons and they should not be forced to fill up on grass. You all know that lack of limestone and oyster shells in the ration tends to cut down egg production and to increase the proportion of cracked eggs.

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Mr. Lee tells me that most poultry raisers use their cracked eggs at home while they are still fresh. Cracked eggs have very small market value and they represent a big loss to the industry every year, he told me.

And now let me summarize Mr. Lee's suggestions about marketing. Here they are:

"Market eggs promptly," he advises. "Market them at least twice a week and even three times during the summer months. Holding eggs lowers their quality.

"If possible, sell to a dealer who buys eggs on the basis of grade--- and one who does not pay the same price for all eggs regardless of their quality. If you produce high-quality eggs you are entitled to a premium over the low-grade price.

"And then, protect the eggs from sun and rain on the way to market. Remember that heat and dampness are the two biggest factors which cause eggs to spoil."

ANNOUNCEMENT: Your Farm Reporter has just told you what he learned from his friend Mr. Lee, about producing eggs of good market quality. For further information on this subject write to Your Reporter at Station_____or at the Department of Agriculture in Washington.

YOUR FARM REPORTER AT WASHINGTON.

Thursday, June 5, 1930.

THE POSSIBILITIES OF COOPERATIVE MARKETING:

No. 1: What is the Agricultural Problem?

ANNOUNCEMENT: Today we present the first of a series of sixteen talks on the possibilities of cooperative marketing, as outlined to Your Farm Reporter at Washington, by specialists of the cooperative marketing division of the Federal Farm Board. These talks will form a complete sketch of the situation. We will have one each week until the series is completed--- Now, Mr. Reporter, we are ready to begin. What are the possibilities of cooperative marketing?-----

Before we take up cooperative marketing as a help in solving the farm problem, let's first get a clear view of what this "problem" is. A simple statement of conditions farmers now face, may do well for a starter.

Mr. A. W. McKay, the chief of the cooperative marketing division of the Federal Farm Board, agreed to open this series by answering the question: "What is the agricultural problem?"

"From the point of view of the farmer," he says, "the agricultural problem is the inability of the farmer to sell what he produces for enough to pay expenses and give him a fair return on the capital he has invested in this farm business."

Mr. McKay points out that this problem has largely arisen out of three things: first, the growing of surplus quantities of various crops; second, uncontrolled marketing; and third, uncertain or irregular prices.

"In the early days," he says, "the farmer produced crops mainly for home consumption. As a rule, the harder he worked, and the more acres he planted, the more money he would make.

Now, in our present-day commercial agriculture, often the harder the farmer works, the better the growing conditions, the more acres he has planted, and the bigger crop he grows, the less he may get for it.

He is told he has produced a surplus and that more of his product is offered on the market than the market can absorb at prices which will give him a profit.

For example, cotton growers in 1926 raised nearly two million more bales of cotton than the year before. But that bigger crop actually paid them about \$500,000,000 less than the smaller crop had paid.

In cases of such surpluses, farmers are often advised to turn to other crops -- to diversify. Often it is hard for some farmers to do that.

Their land may be suited to certain crops and not to others. They may know how to raise one thing, but be absolutely inexperienced in growing the proposed substitute. In any event, the farmer may be uncertain as to what to substitute. In recent years, there have apparently been surpluses in nearly all farm products at some time.

The fundamental difficulty, seems to be, according to Mr. McKay, that the successful marketing of farm products has developed from a local basis to one which has come to involve widespread, often world-wide, conditions.

The pioneer farmer was growing stuff for his own use or for use in his own local community. He was able to gauge the demand and adapt his production to it. At the present time, our cotton and wheat growers produce for a world market. Crop conditions in India or Australia may affect the prices we get. Even the relative prosperity of consumers in different European countries may be a factor in the demand and consequent prices.

The farmer, as an individual, does not have the understanding or control of market conditions which his forefathers had. He finds it hard to get all the information he needs under modern conditions, although the United States Department of Agriculture and other public agencies have made a good start toward supplying such information. Even when he has it, it may be of little use, because other farmers less well informed may upset all his plans.

In addition to all this, there has been an increase in the output of farms crops per man. It is estimated that the output per man has increased about thirty per cent in the past fifteen years. Paradoxical as it may seem, by increased efficiency in production the farmer has added to the surplus of farm products and increased his market problems.

But the surplus is not the only phase of the farm problem. Except in isolated instances, the marketing of their crops has not been under the control of the farmers. When the distant demand became more important, individual farmers were unable to handle farm products all the way to the consumer market. Large numbers of middlemen entered the business of marketing farm products. That resulted in conditions which have proved unfavorable to farmers.

A large number of small, competing agencies grew up. That resulted in duplication of packing plants and warehouses. That has meant added expense and increased the farmers' costs. Then too, there has been more or less speculation by middlemen, which has resulted in losses to both producers and consumers.

However, the most serious effect of this system, Mr. McKay estimates, is that the production of desirable grades and varieties of farm stuff has not been encouraged. Privately owned agencies have been inclined to pay flat-prices. The man who produces A-No.1 potatoes, for instance, gets the same price as the man who produces inferior grades.

That kind of thing has tended to result in progressively lower qualities and the many inferior farm products put on the market have increased handling and marketing charges generally. Payment of freight on unsalable products reduces the farmer's returns. Low grade products also have an unfavorable influence on consumer demand.

The farmers' lack of control in his markets and the production of surpluses are two of the main phases of the farm problem. Closely connected with these two is that other phase of uncertain prices.

It is not high prices which agriculture needs so much as it is more certain or more stable prices. Organized dairymen in many sections have learned that. They have found that if they can produce market milk profitably at \$3.00 a hundredweight, it is to their interest to sell at about that level, rather than raise the price, say to \$3.50 and bring into their market milk from outlying districts. It is the same with wheat or other products. If a good, average wheat grower in Kansas can produce profitably at \$1.50 a bushel, it is to his interest to sell for that. \$3.00 wheat will bring producers on marginal and submarginal land in competition with him. The temporary gain will be more than offset by later losses. No business can avoid more or less frequent losses, if the price of the stuff it produces or handles is subject to violent ups-and-downs.

These three things, uncertain prices, uncontrolled markets, and surplus production, form the three-headed monster which now prevents farmers from escaping from the Hades of Unprofitable Farming.

Next week we will see what Co-ops can do in the way of taking a whack at that uncontrolled markets head of this Farm Problem Monster.

ANNOUNCEMENT: Improvements in marketing by farmers cooperatives will be the subject of the second one of this series of sixteen talks on the possibilities of cooperative marketing. This series comes to you through the cooperation of this Station ----- with the Federal Farm Board and the United States Department of Agriculture.

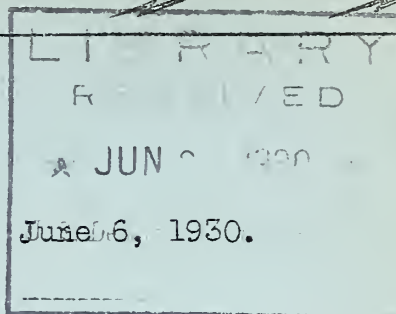
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1. The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the structure of the atom is not a simple one, but a very complicated one.

2. The second part of the paper is devoted to a discussion of the general principles of the theory of the structure of the molecule. It is shown that the structure of the molecule is determined by the laws of quantum mechanics, and that the structure of the molecule is not a simple one, but a very complicated one. The structure of the molecule is determined by the laws of quantum mechanics, and the structure of the molecule is not a simple one, but a very complicated one.

3. The third part of the paper is devoted to a discussion of the general principles of the theory of the structure of the crystal. It is shown that the structure of the crystal is determined by the laws of quantum mechanics, and that the structure of the crystal is not a simple one, but a very complicated one.

4. The fourth part of the paper is devoted to a discussion of the general principles of the theory of the structure of the solid. It is shown that the structure of the solid is determined by the laws of quantum mechanics, and that the structure of the solid is not a simple one, but a very complicated one.



YOUR FARM REPORTER AT WASHINGTON

Friday, June 6, 1930.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

Dairy Interview No. 38: SUMMER---A CRITICAL TIME IN QUALITY CONTROL

ANNOUNCEMENT: At this time Your Farm Reporter at Washington makes his weekly report to dairy farmers. He brings you today some tips on a familiar problem--- and he introduces again a familiar friend, Mr. Ernest Kelly, who is the chief market-milk specialist of the Bureau of Dairy Industry, United States Department of Agriculture. He's going to talk about producing milk of high quality. Needless to say, this familiar subject holds new significance at this season of the year, since summer is the critical time in quality control. And now here's Your Reporter to tell you about his latest chat with Mr. Kelly.

The next time it is 90 in the shade ---and no shade--- you might recall that old saying, "What is one man's meat is another man's poison."

You might reflect that the same heat which is making you suffer is affording millions of other living things a chance to thrive and prosper. You might think of those plants and animals to whom heat and humidity mean life, liberty, and the pursuit of happiness.

And if thinking this will make you feel any cooler, you are welcome to the idea without cost. However, I'm not recommending it as a cheerful thought for a hot day. The two things which most dairymen would think of offhand as thriving on heat and humidity are bacteria and flies. And these hardly qualify as material for pleasant thoughts. At least, so I gather from Mr. Kelly.

Of course, everybody knows that it takes more work and more care to produce high quality milk in the summer than it does in the winter. And there are several reasons for this. One big reason is that bacteria delight in warm temperatures. When the temperature increases their activity increases -- and this means temperature of water used for cooling as well as atmospheric temperature.

Mr. Kelly pointed out one case as an example. "Take dairy utensils that have been carefully washed," he explained. "No matter how careful the washing, there are always a few bacteria left. And when the weather is warm these bacteria will multiply much more rapidly than they would in cold weather. So it is pretty hard to be too careful at this time of year.

You'll want to remember too," he told me, "that milk must be especially high in quality when it leaves the farm in the summer time. It has to pass through the heat during transportation, and it may have to undergo high temperatures in the home of the consumer later on. So, to be satisfactory when it is finally consumed, it must start out with a low bacterial count."

I asked him how this was accomplished in hot weather.

"Oh, it's the same old story," he replied, "only it's more difficult in summer than at other times. Strict sanitation---proper cooling---and proper protection from heat and contamination---all these are essential to producing high quality milk during the next few months."

He went on to emphasize proper cooling particularly--- but since we have already discussed cooling pretty thoroughly in the last few weeks, let's just remember that bulletin on "Cooling Milk and Cream on the Farm," and pass on. The number, you remember, is Farmers' Bulletin No. 976-F.

Perhaps I should repeat, however, what Mr. Kelly said about water for cooling purposes.

"If ice is not available," he told me, "then you must take great care to get the coldest water possible. And you need to take just as great care to keep it cold. For instance, if water is stored in an exposed tank all day, it is pretty certain to warm up. It is better to have water coming direct from a spring or a well.

"And where you have running water, do pump it direct from the spring or well if possible" he went on. "An underground pipe naturally delivers much colder water than a carrier that runs over the surface of the ground."

At this point I switched the conversation to sanitation. I asked him if it is necessary to wipe off a cow's udders and flanks before milking, as I've noticed many farmers do.

"Yes indeed," he declared. "It may not always appear necessary, but it certainly is the only way to play safe. I'd say that by all means udders and flanks should be cleaned with a clean, damp cloth. Cows may look clean while they're out-of-doors, but appearances are often deceiving. There may be a great deal of dust in the hair that is not visible."

And then, continuing on the subject of sanitation, we naturally began to talk about flies.

I need not repeat Mr. Kelly's remark that flies are extremely undesirable from the standpoint of sanitation. If they get in the milk-house, they contaminate utensils and besides that, they are a source of annoyance to both cows and milkers. But, says Mr. Kelly, it is possible to reduce the number of flies so that they are no longer a serious problem.

"How?" seemed the logical question, so I asked it.

"There are three main ways of combating flies," he said.

"First of all, get rid of the breeding places. For example: remove piles of manure at least once a week, or store the manure in a fly-proof pit. Keep droppings about the yard cleaned up; and allow no accumulation of decayed material of any kind.

"The second way is by trapping. And it is possible to trap a large number of the flies that buzz around dairies. Trapping not only kills them eventually, but it prevents their breeding.

"And then the third method is spraying. And there is a home-mixed spray, by the way that has proved quite effective at the Department's experiment farm. It may be applied just before milking to get the flies coming into the barns on cows, or in the evenings when the flies settle on the walls of buildings."

For detailed information on this home-made spray, you might write to Mr. Kelly at the Department of Agriculture in Washington. There is no bulletin on that subject at present, but Mr. Kelly said he would be glad to give full information in answer to all inquiries.

And as for methods of trapping flies, let me refer you to Farmers' Bulletin No. 734-F, called "Flytraps and Their Operation."

And now there is one more important problem that summer usually brings us. And that is the problem of keeping weed flavors and odors out of the milk. But you'll remember that we've also discussed that question very recently, so since my time is about up, may I just remind you again of Leaflet No. 25. Leaflet No. 25 is a 4-page publication which gives in brief form the methods of preventing odors and flavors.

ANNOUNCEMENT: Your Farm Reporter mentioned three bulletins today and, if you like, I'll read over the numbers and titles once more. Here they are: "Cooling Milk and Cream on the Farm," Farmers' Bulletin No. 976; "Flytraps and Their Operation," Farmers' Bulletin No. 734; and "Preventing Feed Flavors and Odors in Milk," Leaflet No. 25. Write for these bulletins to Station _____ or to the Department of Agriculture in Washington.

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In 316
YOUR FARM REPORTER AT WASHINGTON

Monday, June 9, 1930.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

All Regions.

HOW THE TEST TUBE HAS HELPED OUR ANIMAL INDUSTRIES.

OPENING ANNOUNCEMENT: The big research laboratories of the United States Department of Agriculture have done much to help the man behind the plow. Your Farm Reporter at Washington has just had a talk with Dr. M. Dorset, in charge of the biochemical laboratory which has contributed a great deal to the livestock industry. He is going to tell us about his trip through the laboratory, and about his talk with Dr. Dorset -- the man who discovered the preventive treatment for hog cholera. All right, Mr. Reporter.

--ooOoo--

Folks, I want to talk to you to-day about the battle that farmers have eternally to wage against livestock diseases and troubles. Figuratively speaking, the livestock producer is a soldier who has to be on the firing line all the time. He faces the unremitting offensives of livestock diseases, germs, parasites, and other animal bushwhackers.

This battle between livestock producers and livestock-disease troubles is a fierce struggle, but the stockman is better armed each year. Modern serums and vaccines, when properly used, put many livestock enemies to flight. The United States Bureau of Animal Industry has done much to find successful ways of treating livestock diseases and troubles ---- and Uncle Sam's scientific research men still work away in the laboratories for your benefit.

The other day I visited the office and laboratory of Dr. M. Dorset, the quick-spoken little man from Tennessee who discovered the preventive treatment for hog cholera. That division of Uncle Sam's Bureau of Animal Industry includes the biochemical laboratory.

I asked Dr. Dorset to let me take a peep at the big laboratory over which he presides.

"Gladly," he said, and led the way through a series of big rooms filled with tables, test tubes, and white-aproned men and women.

The first thing that attracted my attention was a number of pigeons. Some were healthy specimens, others were nervous, sick, and about ready to pass in their checks. I immediately asked for information.

"Well," said Dr. Dorset, "we are always trying to find better ways of combating animal diseases. In this particular experiment we found that pigeons

did well when fed fresh pork. When we took the pork out of the ration the pigeons developed a disease similar to the beri-beri disease which has caused so much trouble in China and Japan among human beings. This experiment led to the discovery that pork both fresh and cured contains vitamin B."

As we passed along through the laboratory I saw some pieces of untanned skin in a glass case. My curiosity was aroused. I asked, "What's that doing in here?"

"That skin," he said, "is in here because we are always trying to find out more about the various diseases which levy toll on livestock. That skin is here because of anthrax, naturally a disease of cattle and sheep. Sometimes people get anthrax from imported hides, and that's why the skin is here. Of course the danger is eliminated from the finished leather -- but the wash water used on the skins in the tannery may carry the anthrax germs to streams and thus infect cattle. One of our jobs has been to find the best way to kill the germs in that wash water. We have found that the anthrax germ is one of the hardest germs to kill that we have ever gone up against, but we have worked out a method. Someday we may find a treatment for the animals that will bring anthrax absolutely under control. Of course, you understand, we have an anthrax treatment now, but if we can find something better, we want it so we can pass it on to the livestock producers."

The next thing to attract my attention was a large tray filled with test tubes. There were different colored materials in these tubes. Again I asked for information.

"This laboratory," Dr. Dorset told me, "tests different disinfecting materials for germ-killing power. Carbolic acid used to be our most powerful disinfectant, and is still good, but the material in that big test tube on the end of the rack is 1,000 times more powerful than carbolic acid. One of the men here in this laboratory discovered it."

Dr. Dorset had just told me that the anthrax germ was very hard to kill, so I thought maybe this powerful liquid in the big test tube would turn the trick. I put the question to him.

"The powerful disinfectant," he answered, "that is in the test tube, is in the process of further refinement and is not ready to be given to the public at this time. When it's ready for the general public, I'll give you a ring and you can come over and get the facts about it for another radio talk."

We next passed a man working on a certain phase of the poultry disease commonly called B.W.D. That disease, as most of you know, is fatal to young chicks, and kills about 10 per cent of all chicks that are hatched in this country.

We passed another man trying to find a successful way to treat hog "flu" and still other people busily occupied with other work.

I could go ahead, I suppose, for an hour trying to give to you the impressions I got from this trip through the biochemical laboratories. But

I think I had better stop here to give you the main point of my story.

That point is this: In this laboratory more than a score of scientists, jointly hired by every one of us, are working away with two main purposes in view. One purpose is to discover treatments that will PREVENT livestock diseases. That is our first line of defense.

The other purpose is to develop a second line of defense to fall back upon when we do not have any adequate preventive for a disease. Lacking a preventive, it is desirable to have at least methods of diagnosing the disease in its early stages and enabling us to use the best procedure for protecting the animals still healthy.

For our first line of defense, the scientists have developed serums and vaccines to prevent such animal diseases as hog cholera, blackleg, anthrax, and shipping fever.

We do not have a serum to prevent tuberculosis in livestock or glanders in horses. However, we do have substances which will enable us to diagnose the presence of these diseases even in seemingly normal animals. Being able to diagnose, at least makes it possible for us to know our exact situation and to take the drastic measures necessary to stamp out the infectious diseases which we can't prevent. Dr. Dorset introduced me to one group of workers making MALLEIN, the substance used in testing horses for glanders. I also met people who are working with TUBERCULIN used in testing cattle for tuberculosis. And let me emphasize this: tuberculin CAN NOT produce tuberculosis. Tuberculin contains no tuberculosis germs. It is a byproduct of the germs; it produces in animals suffering from tuberculosis characteristic reactions so that you may recognize the presence of the disease; it does no harm at all to animals free from tuberculosis.

Well I see that I must be leaving you. I want to have this thought tarry behind me:

All of this work I have been describing to you today is directed toward the discovery of facts and of medicinal substances to arm you for your fight against livestock diseases. As soon as the laboratory work and field trials have gone far enough to prove a treatment for disease prevention or diagnosis the United States Department of Agriculture issues a publication to inform you about it. Before I bid you good-bye I am going to mention five publications which you can get from the United States Department of Agriculture without charge, and which will give you the facts on some of the worst livestock diseases.

Here is the list:

HOG CHOLERA -- Farmers' Bulletin No. 834-F.
BLACKLEG; ITS NATURE? CAUSE, AND PREVENTION -- Farmers' Bulletin No. 1358-F.
ANTHRAX OR CHARBON -- Farmers' Bulletin 784-F.
MAINTAINING THE HEALTH OF LIVESTOCK IN TRANSIT -- Leaflet No. 38-L
RELIABILITY OF THE TUBERCULIN TEST -- Miscellaneous Publication No. 59-M.

The United States Department of Agriculture publishes still other publications on other livestock diseases. I invite you to write to me at this station or direct to the United States Department of Agriculture stating your problem and asking for available publications concerning it.

CLOSING ANNOUNCEMENT: So Your Farm Reporter leaves us until to-morrow at this hour when he will try to answer the question "Why Do Potatoes Run Out?" Your Farm Reporter's talks are presented in cooperation with the United States Department of Agriculture by Station_____ Write to Station_____ for copies of the publications offered by the Farm Reporter.

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U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON.

Tuesday, June 10, 1930.

Crops and Soils Interview No. 39:

Why Potatoes Run Out.

ANNOUNCEMENT: Your farm reporter at Washington has been inquiring about why potatoes run out. He went straight to the specialists of the United States Department of Agriculture about it. Now he is going to tell us what the specialists told him ----- Well, Mr. Reporter, what did he say?-----

Why do potatoes run out?

You might say they "run out"; but they don't run out for the same reason we used to think. And the discovery of the real reason has meant an increase of ten to twenty bushels to the acre in our leading potato states. These three hundred and four hundred bushel potato clubs are also largely due to that discovery.

Dr. Freeman Weiss, potato pathologist of the United States Department of Agriculture, has been explaining to me just what happens when potatoes run out, and how we can prevent it. We used to think that cutting sets for planting made the potatoes lose their vigor. Now, Dr. Weiss tells me, investigators in this country and Europe agree that the only factor in the running out is the accumulation of virus diseases in potatoes.

W. A. Orton, one of the U. S. Department of Agriculture men, was the first to recognize the importance of virus diseases. And the Department has continued to lead in the fundamental research on the nature of those diseases on which the seed certification programs of the various States are now based.

Instead of just "running out", potato plants became infected with a strange virus which is carried to them mainly by plant lice or other insects. The infection is distributed in the juice to all parts of the plant. All the tubers carry it. Once a plant is infected, all its vegetative descendants are perpetually doomed to carry the infection.

There are a number of these virus diseases, including spindler tuber, leaf roll, and various types of mosaic which give the plant leaves an irregular mottled or calico appearance.

The milder mosaic will cause an average decrease in the yield of from ten to fifteen per cent and rugose-mosaic will cut the yield of a potato plant in half. Leaf roll, in which the starch stays in the leaves instead of being stored in the tubers where it belongs, may cut the total yield from a potato field 20 to 50 per cent. In spite of the use of the best planting practices and care, the plants are just doomed to yield that much less.

Spindle-tuber, commonly referred to as "running-out" or "running long" or "offshape" or "poor-shape", causes plants to yield less and the tubers that shape which are produced take a lower grade in the market.

You might think that since these virus infections are carried by insects, the way to stop these troubles would be to kill off the insects. Dr. Weiss says when you realize that one plant louse feeding on a diseased plant and then going to a healthy one might continue the spread of the virus, you can see that control of such troubles by control of the insects is hardly practical.

It is much more feasible to eliminate the plants which act as sources of infection. And that is just what our leading seed potato states now do. Plants affected with virus as well as certain fungus diseases are rogued out in a well-organized and officially supervised program by the agencies in the different states which certify seed potatoes. Therefore certified seed is in general a guarantee that the diseases have been eliminated or reduced to very low limits.

The production of certified seed has become quite an industry in all the New England States, in New York, in Pennsylvania, in Michigan, in Wisconsin, in Minnesota, in Nebraska, and in the Dakotas and Montana.

It is even becoming an industry in some of the Southern States where a late crop is grown and where high altitude gives a climate much the same as the northern States have on account of their higher latitude.

Potatoes are a moderately cool-weather crop. A short season with cool weather is needed to produce vigorous seed potatoes. Also warm weather tends to mask the appearance of some of the virus diseases, so that infected plants can not be readily detected and rogued out. For that reason, most southern potato growers must depend on the cooler regions for their seed potatoes. In most of the certified potato States, the potatoes are thoroughly rogued three times during the season under the inspection of a State official.

That certification together with spraying and seed treatment Dr. Weiss estimates has been a big factor in the substantial increase in potato yields in our leading potato states.

Spraying is done practically all through the summer. In the more northern sections, it is chiefly done to control late blight. In the Middle States, the spraying is for the purpose of controlling fungus diseases and hopper burn. Copper lime dust or Bordeaux mixture is chiefly used.

Mosaic, and leaf roll, and spindle tuber, however, are carried in the seed. They are hereditary diseases. The way to prevent them, is to plant only certified seed. To produce such seed potatoes practically free from those diseases are grown well away from any field where such troubles are known to be. All abnormal plants are rogued out of such plots as soon as they show up, and special care is taken to keep out weeds which might possibly be a source of infection.

Dr. Weiss says that it is best for growers who are interested in pro-

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ducing high-grade disease-free seed stocks to get together with the neighbors to prevent any mosaic infected potatoes from near-by defeating the plans. The problem will be much simpler, if none but disease-free seed are planted within a quarter of a mile of the seed-potato fields. Growing one variety or at most two, in the neighborhood will help.

But all those things, as well as detailed descriptions of the different diseases which are mainly responsible for the so-called degeneration or "running out" of potatoes, are contained in a bulletin issued by the United States Department of Agriculture and called "Why Potatoes Run Out." The number of that bulletin is Farmers' Bulletin No. 1436-F. That is not hard to remember, but if you want one of those bulletins, better jot it down now and send to the United States Department of Agriculture at Washington, D. C. for it.

ANNOUNCEMENT: Did you get the number of that bulletin. Ask for Farmers' Bulletin No. 1436-F, on "Why Potatoes Run Out." You can get it either through this Station or by writing direct to the United States Department of Agriculture, at Washington, D.C. Station_____ cooperates with the Department in calling your attention to these things.

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YOUR FARM REPORTER AT WASHINGTON

Wednesday, June 11, 1930

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

Poultry Interview No. 39: THE ECONOMICS OF CULLING.

ANNOUNCEMENT: The next 10 minutes brings us our weekly poultry chat with Your Farm Reporter at Washington. Your Reporter's subject today is one that everybody is familiar with, but at the same time it is a question that most folks probably would like to know more about. The subject is culling; or rather, as Your Reporter presents it, "The Economics of Culling." And here goes.....

The economics of culling is something that can be put into a nutshell---- and a rather simple nutshell at that.

When I asked Mr. A. R. Lee, Department of Agriculture poultry husbandman, to explain the "why" of culling for me, he crowded it into a nutshell with one sentence.

"It simply does not pay to keep hens which do not pay for their feed," he said.

That statement didn't admit much room for argument, as far as I could see. I was trying to think of some way to make a 10-minute report out of it when Mr. Lee kindly came to the rescue.

"As a matter of fact," he continued, "practically all farm flocks contain a considerable number of star boarders. The situation seems to be about this: The average farm flock of 100 hens has from 15 to 30 of these low producers. Then there are a few very good layers, and a larger intermediate group which give just fair production.

"Now from the standpoint of economics it seems pretty evident that this group of 15 to 30 low-producing hens has no place in the flock this summer. They probably will lay no more eggs until next winter, so getting rid of them is a matter of business, pure and simple. By culling them out you can cut down your feed bill one-fourth without affecting egg production at all.

"Take commercial flocks for instance," he went on. "Commercial poultrymen cull their flocks much more severely than average poultry raisers, and they cull over a considerably longer period of time. And this is one of the big reasons why commercial flocks give an average production of from 150 to 160 eggs, while farm flocks rarely run above an average of 125 to 130 eggs."

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Mr. Lee drew from his files the report of a large commercial poultry farm in New Jersey. He pointed out that this farm culled throughout the late spring and summer from May to October. For example they culled out 6 per cent of their hens in May and the percentage kept increasing each month until August they culled 17 per cent of the hens remaining.

"Do you mean that average poultry raisers would profit by this sort of culling?" I asked.

He replied that he did, to a considerable extent. "Of course," he explained nobody would contend that farmers, for instance, can afford to give such careful attention to culling nor cull as heavily as commercial poultrymen can. However, I believe the success of commercial flocks gives us all a good object lesson. I think it would undoubtedly be profitable to cull most farm flocks more heavily and over a longer period than is now the practice.

"Take the older hens for instance. Hens are rarely profitable layers after 2 or 3 laying seasons. Careful tests at the governments principal poultry farm show that Leghorns will drop off about 20 per cent in production after the first year. Heavier fowls drop off still more rapidly, usually 30 to 35 per cent. And production takes an even sharper drop the second and third years.

"Besides this," he added, "elimination of old hens tends to reduce disease in the flock---tuberculosis especially, since tuberculosis is more prevalent in older birds."

"How close would you cull the average farm flock?" I inquired.

"Well, the HOW of culling is more complicated than the WHY," he replied. "It depends, for one thing, on the number of pullets available to replace the hens. If possible, half of the laying flock next fall should be pullets. And as I said before, cull out ALL of the OLD hens.

"Before you actually start culling, however, be sure that your flock is in good condition. Remember that the condition of the flock is influenced by feeding, by diseases, and by insect pests. A poorly fed flock may show 50 per cent culls, when as a matter of fact it should not. Some of these so-called culls might be good producers if they were properly fed."

"When is the time to cull?" I asked.

Mr. Lee told me the time for the first heavy culling is within the next month. "At this time," he said, "eliminate the hens whose physical appearance indicates they are poor layers. Then later on in the summer, eliminate the next lowest group of layers. And select again in September or October to mark the best hens in the flock for use as breeding stock in the spring.

"Tell me about these physical characteristics which indicate the laying ability of a hen," I requested.

"There are a number of useful points," he explained, "and all of them should be considered together in arriving at a conclusion. Careful examining and handling

will usually tell you whether a hen is laying. And hens which are not laying now are usually poor producers and thus are candidates for market."

Let me run over some of these main points as Mr. Lee outlined them.

First, when a hen is not laying her comb and wattles are shrunken and comparatively hard, and they are pale and dull in color. A laying hen has a plump, bright-red comb which appears full of blood, waxy and rather soft in texture.

When fowls are laying freely, the color of their legs is inclined to bleach or fade. But when they stop laying this yellow color gradually comes back into the legs. This same change of color also occurs in the beaks, and in the vent. A yellow vent indicates that the hen is not laying, while a white or pink vent indicates production.

Again, the pubic bones--one on each side of the vent--are spread well apart and are flexible in a good layer. But when a hen is not laying they are closer together and harder. To be more exact, these bones are the width of three or more fingers apart in good layers, but only one or two fingers at the most in a hen that is not laying.

A good layer also will have an abdomen that is soft and flexible below the vent. In the non layer the abdomen tends to draw up and become hard.

And of course, it's a well known axiom that early molters are usually poor layers and late molters are good layers. Good layers will not start to molt until September or October.

Now I've just sketched briefly a few of the main points that Mr. Lee outlined. I haven't attempted to make this a report on HOW to cull. If you'd like to refresh your memories on the details of culling, write for a copy of Farmers' Bulletin No. 1524-F, called "Farm Poultry-Raising."

But getting back to the economics of culling, Mr. Lee advises that the poor producer be marketed as soon as they are culled.

"It's merely good business to market them promptly," he says. "In the first place they aren't paying for their keep. In the second place, you can give your pullets better attention with the hens out of the way. And in the third place, there is no object in holding hens at this time of year, because at this season the price of market poultry tends to go lower rather than higher."

ANNOUNCEMENT: Your Farm Reporter has just told you about his interview with Mr. A.R. Lee on "The Economics of Culling." Write for that bulletin on "Farm Poultry-Raising" either to Station _____ or to the United States Department of Agriculture in Washington. The number is Farmers' Bulletin No. 1524-F.

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U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON.

RELEASE Thursday, June 12, 1930.

THE POSSIBILITIES OF COOPERATIVE MARKETING:

No.2: What Can Farmers Do To Improve Marketing?

ANNOUNCEMENT: Last week, we began a series of sixteen talks, on the possibilities in the cooperative marketing of farm products. These talks come to us, from specialists of the Federal Farm Board, through your farm reporter at Washington. As you recall, the first of this series told just what the farm problem is. -- Now we are going to hear what farmers can do cooperatively to meet that farm problem. ----- Well, Mr. Reporter? -----

What can farmers' co-ops do? How can they help solve this gigantic problem of crop surpluses, and uncertain prices, and uncontrolled marketing?

I took this question to Dr. Frank B. Bomberger, who is in charge of the organization work of the cooperative marketing division of the Federal Farm Board. He outlined to me some of the improvements cooperation can make in marketing.

But first he pointed out why we need cooperation.

In the old days, most farm stuff was grown for local consumption. No farmer had to pay much attention to what other farmers were doing. He took his stuff to market himself and dickered directly with the retailer or the consumer.

Now, Dr. Bomberger says, seventy-five per cent of our supplies come from remote distances. It is estimated that on the average, our food products travel 1,500 miles to market. When a farmer sits down to think what he can do to improve conditions in marketing, he is likely to find himself at sea. He is only one of more than six million farmers. What the other six million are doing, as a rule, he has little means of finding out. How many of those growing similar or competing products will dump their stuff on the market the same time he does, he doesn't know. Even if he, as an individual, devotes intelligent effort toward cutting down his cost of production and improving the quality of his product, he may be out of luck. What the other fellows do may prevent him getting any reward for his extra work.

In most cases, his production is so small, he can't make any serious impression on the market. He has to ship in small quantities. He has to pay the high freight rates and high handling charges which often go with small-sized shipments.

The minute he begins to think about cooperation with his fellow producers, however, many opportunities open up.

Through cooperation, uniform grading standards can be adopted and an impartial grading and inspection system can be put in operation. Farm products can be put on the market under the most favorable conditions.

As Dr. Bomberger says, nobody questions the fact that the trade is willing to pay more, and consumers are willing to pay more, for standardized products, packed so as to show their standard quality. Standardization is recognized as the fundamental basis of cooperative marketing.

As soon as a standardization program is in operation, the cooperative is assured of a volume of products which enables it to ship in car-load lots and to supply a much wider market.

An individual farmer with a small quantity of stuff is limited almost entirely to local or near-by markets. An organization with an abundant supply of standardized products may send its stuff to the remotest market in the country.

The organization can afford to advertise its standardized products under nation-wide brand names. Some of our most successful farmers' associations now market their products under names recognized by consumers from one end of the country to the other.

Standardization and advertising enable consumers to get a more uniform product, and a better quality product, at a price in harmony with the quality of the product and the service rendered to them. Consumers have actually benefited in improvements of the quality of stuff offered on the market by co-ops. Producers have been benefited by the increased demand, which comes from the consumer's ability to rely on the uniform quality of the products marketed under efficient standardization.

The expansion of the market horizon is one of the most notable advantages that comes through a cooperative marketing program. An organization, by affiliation with others of the same sort, is enabled to cover a region or even the national field. That also gives it a chance to regulate the flow of its products to market.

One of the greatest evils in our present system of marketing farm products, Dr. Bomberger says, lies in the competitive selling by many individual producers and many selling organizations, whether cooperative or not.

On almost any market, at almost any time, when the supply is about equal to the demand for it, there is a tendency for the sales agency handling that product to develop a feverish haste or anxiety to get rid of the part of that commodity which they handle.

That eager selling competition often develops a market psychology which practically amounts to hysteria and panic. Many times, commodities are sold far below the values which any sane analysis of market conditions would have indicated. For example, Dr. Bomberger says he has seen fifty cents or even a

dollar per barrel knocked off the price of early potatoes in one day merely because of a selling panic. In that case, with about five hundred cars being sold, the growers just lost fifty thousand to one hundred thousand dollars for no reason but the wild dumping of potatoes on the market.

A cooperative organization can prevent such a selling panic. If it is wide enough and has control of large enough percentage of the market supply, it can calmly consider the true market situation. By preventing sales competition it can steady the flow of that commodity to market and sell for the last penny the stuff is worth. That doesn't necessarily mean holding stuff off the market or damming it up by refusal to sell until arbitrarily fixed price is reached. It means just selling according to true demand conditions, instead of wildly dumping stuff on the market and knocking the bottom out of prices, in an eager effort to beat other producers to the market.

Expanding the market for the farmer's product and steadying the flow of products to market, by cutting down competitive selling, are two of the advantages possible through cooperatives. Another advantage is that the cooperative association affiliated with others in a wide-spread organization is in possession of the information needed to stabilize production. But that is another story. Next week we will take up the question of what farmers' co-ops can do toward improvements in production.

ANNOUNCEMENT: Remember at this time next week, Station----- will present another of this series of sixteen talks on the possibilities of cooperative marketing, as outlined by the specialists of the cooperative marketing division of the Federal Farm Board. This series comes to you as a result of our cooperation with the Federal Farm Board and the United States Department of Agriculture.

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YOUR FARM REPORTER AT WASHINGTON

Friday, June 13, 1930

NOT FOR PUBLICATION

Speaking Time: 9 Minutes.

Dairy Interview No. 39: FEEDING THE DAIRY COW IN SUMMER

ANNOUNCEMENT: At this time Station _____ presents again Your Farm Reporter at Washington, who brings you today his weekly report to dairy farmers. He reports today on feeding dairy cows in summer. He's going to tell you what he's found out about summer feeding from a feeding expert, Mr. J. E. Dorman, of the United States Department of Agriculture. All right, Mr. Reporter.

There's a big difference between the cow of yesterday and the cow of today.

To begin with, Mr. Dorman points out that cows in their natural state lived almost entirely on roughages. And when cows were wild they grew sleek and fat on green grass alone. But the cow of today, he reminds me, is an artificial animal. Her ancestor gave only enough milk to feed one calf, but the modern cow must give enough to feed several calves. She is expected to produce thousands of pounds of milk a year, and her milking period extends over most of the year.

This is why many dairy cows need extra feed, said Mr. Dorman--- that is, more feed than they can get on pasture alone. This is why it has become a good rule to feed heavy producers grain, even when pastures are excellent.

"Remember," he went on, "the high-producing dairy cow is one of the hardest-working animals on the farm. Can you expect her to do all this work on a diet of green grass alone?--- on a diet that is largely water? You might almost as well try to pitch hay for a month with nothing to eat but spinach."

However, when we think of summer feeding most folks think first of pasture. And pasture should come first, by all means, according to Mr. Dorman.

The dairy cow is a wonder at utilizing roughage, and a good pasture is much more than half the battle in summer feeding. In fact, Mr. Dorman says that low producers will usually produce most economically on pasture alone, if the pasture is good. He follows this rule: Cows giving more than

20 pounds a day should have some grain. But it usually isn't economical to feed grain to cows producing under 20 pounds, when the pasture is good.

To illustrate how important he considers good pasture, he told me of an incident reported by two dairymen-friends of his in a Middle Western state. These dairymen lived in the same neighborhood, and they owned herds which normally produced milk and butterfat at about the same rate per cow. Last year, however, one of the herds was turned on good pasture for the summer, while the other went on pasture that was very poor. Both were given grain in about equal amounts. But the cows on good pasture produced almost twice as much as the herd on poor pasture.

Which emphasizes Mr. Dorman's main idea: That good pasture is one of the most valuable feeds in the world for dairy cows. And at the same time it is the cheapest.

"That being true," I put in, "why do we see so many poor pastures in the country?"

"I can't tell you exactly why," he replied. "All I know is, that as a general rule there are a great many poor pastures in the country. Sometimes it seems to me that the poorest land is usually reserved for pasture. I think this is a mistake. Good pasture is just as profitable for the dairy herd as any crop that can be grown".

"I think it is a poor investment to use a poor piece of land for pasture. And especially in localities where little feed is grown.

And then, after emphasizing good soil and a good stand, he took up good management.

"In the first place," he remarked, "we have to be careful to turn cows on pasture at the right time. There isn't much food value in short and watery grass, and besides, too-early grazing tends to keep the pasture short all season.

"Give a good pasture a good start," he advised, "and you've taken an important step toward keeping it good all summer."

But---of course there always comes a time in summer when pastures dry up. Even the best ones get dry and short. What do you do then? I asked.

"The thing to do is to prepare for that time," was the reply. "Grow some soiling crop----sudan grass, corn, peas and oats, or some other crop which may be harvested and fed to cows green. Or you might feed silage if you have it. Most dairymen fill their silos for winter use, but many are beginning to use them for summer also. They simply make provision to have a little silage left over for the hot months. And they find it comes in pretty handy during the dry season."

"Do you recommend growing these supplemental crops as a general rule?" I inquired.

"Yes indeed," declared Mr. Dorman. "I recommend it very strongly because the time of year when pastures are dry is a critical period. In addition to dry pasture we have hot weather, and insect pests. They're all working hand in hand to bother us. They make proper feeding doubly important at this time. Unless the cow gets plenty of good feed her production is likely to fall off, and then it is pretty hard to get production back to normal again, even with proper feeding later on. Supplemental crops or silage will prevent this slump in production."

Speaking of grain again, I asked about a good grain mixture for high-producing cows on pasture.

Fairly light grain makes the most desirable mixture, Mr. Dorman told me. A mixture of bran, ground oats and a little cottonseed meal is an ideal ration, he said.

"And there's one other thing I might add," he continued. "Even when pastures are good, cows may like a little dry legume hay. It seems to be a good idea to have good legume hay available where cows can get it when they come to the barn for milking. The water content of pasture is very high, and unless cows get dry feed of some kind they don't get enough solid matter. A little dry hay will often help to keep production up during hot weather."

Now, let me refer you to two bulletins of the Department of Agriculture that will answer most any question you may have about feeding in summer. One is called "Feeding Dairy Cows," and the number is Farmers' Bulletin No. 1626-F; the other is entitled "Feeding Dairy Cows in Summer," and is Leaflet No. 7-L.

And that is all for this week folks. So good-day until next Monday.

ANNOUNCEMENT: You may send requests for those bulletins to Station _____ or to the Department of Agriculture in Washington. Did you get the numbers? "Feeding Dairy Cows," is Farmers' Bulletin No. 1626-F; and "Feeding Dairy Cows in Summer" is Leaflet No. 7-L.

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YOUR FARM REPORTER AT WASHINGTON.

Tuesday, June 17, 1930.

Crops and Soils Interview No. 40:

Farm Prices.

ANNOUNCEMENT: Your farm reporter at Washington has been making some inquiries about farm prices. He has been to specialists of the United States Department of Agriculture. Now he is reporting back to us. He is going to tell us what the experts say about the ups-and-downs of prices for farm stuff -- Go ahead, Mr. Reporter --- when you get to talking money, we are all listening.-----

Here is a word of encouragement to start with.

Dr. O. C. Stine tells me it will not be many more months now. He figures business is likely to get better soon. He ought to know. He is chief of the division of statistical and historical research of the United States Department of Agriculture. He says that: "Past experience teaches that business depressions, such as we now have, eventually come to an end, and are sometimes followed by periods of great activity, resulting in increased demand."

That is good news to farmers. You see, farm prices, and city prices, and most other prices, are all tied up, more or less together. They are largely a question of supply and demand. Any farmer who ever raised a crop more than one season hand running knows the supply of farm stuff varies.

But some of us are apt to think of demand as more or less steady. Folks must eat. They must wear clothes. Yet what they eat, and how much, is subject to considerable change.

In the past year, Dr. Stine tells me, industrial activity in this country has declined from about ten per cent above normal to ten per cent below normal. That has cut down the buying power of consumers. One important factor in the present situation in business is the large number of people thrown out of work.

What is that to the farmer? Well, one of the first results from cutting down employment and curtailing pay-rolls in the cities is the drop in the demand for butter. Under such conditions, more folks are willing to take substitutes for butter at lower prices. Butter sales fall off. Butter markets become congested. In order to sell butter, butter dealers and producers have to cut prices.

Similar results have followed in other commodities. During the past twelve months, the general level of prices of all commodities has fallen about eight per cent. That includes prices for stuff the farmer buys as well as the prices for the stuff he sells. As usual the retail prices he pays for many things have not dropped as much as the prices of farm products. Of course, when prices for the stuff he buys come down, he may be willing to take less for what he sells. On the other hand, when the general level of prices is down, buyers are not willing to pay so much for farm stuff. When the consumer pulls his belt up another hole, the farmer gets pinched.

It is commonly said that the world supply of wheat determines wheat prices. Not even counting Russia and China, the United States produces only about one fourth of the wheat crop. We may have a small crop and get low prices, because the world's supply of wheat is big. Or an extra big crop in this country may sometimes sell at high prices because the total world's supply of wheat is small, in spite of our big crop.

In the past year, the world's supply of wheat has declined. Figuring the usual effect of a smaller supply it seemed that prices would go up. However, there was a sharp falling off in the demand for wheat as a result of depressed conditions in consuming countries. That decrease in demand has tended to keep wheat prices down.

So you see whether here or abroad, demand has a very important effect on prices for farm stuff. It is to the farmers' interest that the buying power of city folks keeps up; just as it is to the interest of business men generally that farm prices go up so farmers can buy more.

If the demand continues steady, the big thing which determines prices is the supply. As a rule, prices of any farm product go down as the supply of that crop increases. Prices rise as supplies decrease. Whether it be apples, or potatoes, or hogs, or cotton, the same is true. That is shown very clearly by charts prepared under Dr. Stine's direction and published in the 1930 Yearbook of the U.S. Department of Agriculture.

If you are interested in price relationships, you can get that article in pamphlet form. Ask for "Prices of Farm Products Graphically Presented." It is Yearbook Separate No. 1102.

In cases like wheat and cotton, price trends are governed largely by the world supply. In other cases it is the supply within the United States that is most important in determining price.

Some farm prices move up and down over a period of years in a fairly regular sort of way. That is especially true in the case of livestock prices. With most crops the ups and downs of prices are irregular and uncertain, but with hogs, for instance, the prices swing from high to low to high again in from three to six years with great regularity.

That isn't because of any mystic connection between hogs and the number three, or any other number. As Dr. Stine points out, it is due to the fact that when prices are high, farmers plan to raise more pigs. Then when those little pigs grow to market size, the bigger supply of hogs brings down prices. Then hog farmers decide there is not so much money in selling hogs, so they

cut down on production. You see, as a rule, they probably didn't figure on the other fellow doing the same thing. Of course, the price of corn figures in. As the folks out our way used to say "More corn, more hogs; more hogs, more money."

They don't say that any more. They have found out that more hogs, don't always mean more money. If there is an oversupply of hogs, it may mean less money. That is why we need all the information we can get on market demand and supply. In reaching for high prices, we don't want to overreach.

Of course, in the case of sheep and cattle the ups and downs of prices swing in a longer cycle than in the case of hogs. It takes more time to make any material change in production of sheep and cattle.

Whether it is sheep or cattle, apples or potatoes, the size of the crop in the last several years has been the big thing in determining the price of those products. Supply and demand will determine the prices for farm products. Get that yearbook separate, see how it has worked out in the past. As Patrick Henry said, "I know no way of judging the future but by the past."

ANNOUNCEMENT: That pamphlet is called "Prices of Farm Products Graphically Presented" It is Yearbook Separate No. 1102, and you can get it either by writing to this Station or by writing direct to the United States Department of Agriculture, at Washington, D.C.

YOUR FARM REPORTER AT WASHINGTON

Wednesday, June 18, 1930

NOT FOR PUBLICATION

Speaking Time:

Poultry Interview No. 40: ARE WE PRODUCING TOO MUCH?

ANNOUNCEMENT: And now here is another report from Your Farm Reporter at Washington on the market situation for poultry and eggs. You'll remember he brought you the up-to-date information on the situation at the first of the year, and again in April. And now, Mr. Reporter, let's hear about the new developments of the last two months.

I really didn't find any new developments to tell you about. Rather I found more of the same developments I've reported on before.

It isn't news--- and it certainly isn't good news---to tell you that egg prices hit a lower level this spring than at any time since 1913. And it is hardly news to tell you why, because the reasons are pretty well known by this time.

You'll remember that the low prices which came upon us later in the winter were the result of the heavy hatch in the spring of 1929. We entered this spring with an unusually heavy movement of eggs to storage. When I brought you my last report on the situation from the Bureau of Agricultural Economics -- on April 2 -- the main hope for improvement in prices this year was that production would be curtailed later in the season.

Well, what has happened? I dropped in to the Division of Dairy and Poultry Products to find out, and I was fortunate to get to talk with Mr. Roy C. Potts, the economist in charge of this division.

What Mr. Potts had to tell me was very encouraging---if you happen to be merely a consumer of eggs. But it was not so encouraging for producers.

At that time, he told me, egg prices had declined about 3 cents per dozen since the first of May. Last year they advanced 3 cents during the same period.

The reason? For the most part simply a repetition of what got us into our present difficulty; a continuation of the developments which I spoke about in the two previous reports. In short, heavy production. And despite low prices there is no let-up in sight. In fact all indications point to a heavier hatch this spring than the heavy one of last spring.

For instance, the shipments of eggs to four important markets -- Chicago, Boston, New York and Philadelphia -- were $4\frac{1}{2}$ per cent larger during the first 24 days of May this year than during the same period in 1929.

And on the hatching side we find the same trend. All indications point to a heavier hatch this spring than the heavy one of last spring. Reports of commercial hatcheries to the Bureau of Agricultural Economics indicate that these hatcheries produced 38 per cent more salable chicks than they did last year, during the months of February, March and April. During these three months the same hatcheries set 126 million eggs, which is 32 per cent more than they set in 1929.

However, increasing production is not the only reason for the present situation. The egg price level seems to be between two fires. Not only is production high, but for some reason consumption has slumped. Despite low prices, consumption of eggs during May was apparently about 15 per cent less than it was last year.

Now this is a pretty dark picture. There is evidently no prospect of great improvement in egg prices in the near future. And how long the picture stays dark depends pretty largely on what the producers of eggs do about it. Before good prices come back again something will have to happen---and that something means cutting down production and increasing consumption.

However, I'm really not in the business of dispensing gloom. Let's take a look at some features of the situation that we can think about without registering such long faces.

Take egg consumption, for instance. There is every reason, Mr. Potts believes, why egg consumption should increase. There is no question that eggs are one of the finest foods we have, from every standpoint, and with prices low, it seems logical that people would eat more of them. If producers everywhere--- and especially in the middle west where production is heaviest---and consumers everywhere, will eat more eggs, it may help the situation considerably. Larger egg consumption on both farms and cities during this season of low prices, will tend to improve the market next fall and winter.

And then there is another feature of the recent market situation that may be chalked up on the bright side. Receipts of live poultry are running somewhat heavier than last year, indicating that producers are culling their flocks earlier in an effort to move their surplus poultry to market. Rigid culling of flocks throughout the summer will be another important step toward relieving the situation.

And now for just a brief glance at the poultry markets. They are in somewhat better shape than the egg markets, and largely because of increased consumption. About 33 per cent more poultry was consumed in May this year than in May 1929.

Now, what of the future? What can we learn from our present predicament that will help to prevent 1929 history repeating itself?

Let me give you Mr. Potts' reply in his own words:

"If our experience has taught us anything," he said, "it is this:

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1. The first part of the paper discusses the importance of the study and the objectives of the research.

2. The second part of the paper describes the methodology used in the study and the data collection process.

3. The third part of the paper presents the results of the study and discusses the findings.

4. The fourth part of the paper discusses the implications of the study and the conclusions drawn from the research.

5. The fifth part of the paper discusses the limitations of the study and the areas for future research.

6. The sixth part of the paper discusses the contributions of the study to the field of research.

7. The seventh part of the paper discusses the ethical considerations of the study.

8. The eighth part of the paper discusses the practical applications of the study.

9. The ninth part of the paper discusses the future research agenda.

10. The tenth part of the paper discusses the conclusion of the study.

11. The eleventh part of the paper discusses the acknowledgments.

12. The twelfth part of the paper discusses the references.

13. The thirteenth part of the paper discusses the appendices.

the poultry industry needs a program of orderly production. It has taught us that we need to produce with one eye constantly on the market.

"The poultry industry, you know, is apt to be the least stable of the livestock industries. The turnover is exceedingly rapid. Changes may come quick and fast, and this includes prices as well as flock numbers and egg supplies. And this is all the more reason why we need to keep up-to-date on the trend of production and on market developments---and then, of course, govern ourselves accordingly."

I might add that the Bureau of Agricultural Economics is making it possible for poultry raisers to make their plans on a sound economic basis by furnishing the figures and facts on what is happening, on the farms and in the hatcheries and on the markets. This information is available to every poultry raiser in the country who wants to take advantage of it.

— ANNOUNCEMENT: Your Farm Reporter at Washington has just brought you a report on the current market situation for poultry and eggs. Tomorrow he'll be back at this same time with the third of his special series of talks on the possibilities of cooperative marketing, which he brings you from the Federal Farm Board.

YOUR FARM REPORTER AT WASHINGTON

Thursday, June 19, 1930

POSSIBILITIES OF COOPERATIVE MARKETING:

No.3: What Can Co-ops Do To Improve Production?

ANNOUNCEMENT: Station ----- is cooperating with the Federal Farm Board and the United States Department of Agriculture in presenting a series of sixteen talks on the possibilities of cooperative marketing. These talks come to us in the form of interviews with Farm Board specialists. They are part of our regular series of reports from your Farm Reporter at Washington. ----- Today we have the third talk ----- Well, Mr. Reporter -----

What can co-ops do toward settling the farm problem? Everybody seems to admit that this question of surplus crops and uncontrolled marketing and uncertain prices is a hard nut to crack. What can farmers do cooperatively to meet the problem that they can't do as individuals?

That seems a fair question. That is the reason we put it up to the specialists of the Federal Farm Board. As you recall, one of them emphasized for us some of the improvements co-ops can make in marketing. But how about crop surpluses? That would seem to be more a matter for the individual farmers throughout the country. They are the ones who produce the stuff. Yet Dr. Hutzel Metzger, assistant chief of the Board's cooperative division, points out that some co-ops have been a big help toward better production practices on the farm.

As Dr. Metzger sees it, farmer owned co-ops as compared to private sales agencies, bring farmers a lot closer to the market. Most co-ops have a force of field men. Those field men are continually in contact with the producers. They bring producers information about the demand in the market.

That results in much quicker action in adjusting the quantity and quality of farm products so as to bring to the producer a greater return than is possible through private selling agencies which have no particular interest in getting such information to the farmers.

The closer touch with market demand in the case of fruit co-ops in the Northwest, Dr. Metzger says, has resulted in the elimination of undesirable varieties and grades.

Our leading butter co-op some time back had twenty per cent of the butter supplied by its member creameries scoring 93 or better. At the present time, over sixty per cent of its butter coming from almost 500 creameries

scores 93 or better, and much of the remainder scores over 92 per cent.

9 Over 90 per cent of the output of a number of its member creameries scores 93 or better.

That big improvement in quality was made by representatives of the co-op going right back to the members; and showing them it was necessary to bring in good cream to make good butter, as well as care in its manufacture

In quite a few cases, farm stuff sold through co-ops is marked with the name of the individual producer and the association keeps track of it all the way to market. The co-op knows how it sells and grades out, and can keep the member advised as to any need for improvement. The commission man, on the other hand, often gets about as much whether the stuff is poor or high quality. He has little interest in keeping the producer in touch with market conditions

Some co-ops have even taken steps to improve the seed used by their members. A potato growers' association of Florida contracts directly with growers in Maine for a particular kind of seed. Cotton co-ops have also succeeded in improving the quality of cotton produced by their members, in some cases. They have done that by encouraging the planting of one variety of cotton in a community, so as to avoid lowering the quality through accidental crossing with poorer cottons from near-by fields.

Co-ops can see that each individual grower is paid on a quality basis, so that the price reflects the quality produced. Any permanent improvement, of agriculture in this country, Dr. Metzger says, has to come through efforts to adjust production to demand, both as to quality and quantity.

The milk co-ops have been most successful in bringing about an adjustment of supplies to the demand. Some of them have cut down their surplus considerably. In the case of milk, the demand is more or less steady. On the other hand, there is naturally more milk produced in the summer. On first thought, it might seem that the milk co-ops, in trying to even up production to any considerable extent, would be faced with an impossible job.

In 1920, the milk co-op supplying the Philadelphia area had a big variation in its seasonal supply of milk. Its members produced 96 per cent more milk in the flush season than in the period of low production. Then the co-op put in its production control plan. That is, it paid its members a certain price for the milk they produced during the period of low production. Any quantity of milk in excess of that amount was paid for at a lower price. Prices talk a language most folks can understand. In five years, that co-op reduced its surplus from 96 per cent to 23 per cent.

The Connecticut Milk Producers handle the matter a little differently. That organization lets the producer name the amount he will agree to deliver all year around, and then penalizes him two cents a quart for any more or less than the agreed amount.

Some form of one or the other of those plans is now being used in the Baltimore, Washington, Pittsburgh, Columbus, Boston, Chicago and other milk sheds. The result has been a more even supply of milk throughout the year, with a larger proportion during winter and a smaller proportion during summer than before. And, what's more, the average price to producers for the year has been higher than before. Producers have adjusted their supply more nearly to the needs of the market.

They were able to do that by having cows freshen in the fall; by feeding more in the fall, and by following the practice of buying up cows in the fall and weeding out the poor producers in the spring.

Some fruit co-ops have been able to reduce their surplus supply by taking inferior quality of fruit and manufacturing it into by-products and sending only the first quality fruit to market.

In all such adjustments of quantity and quality, the cooperative organization has a direct interest in the farmer getting as much as possible for his product. No private agency has that same interest.

The most important reason for cooperation, Dr. Metzger declares, is that it brings the producer closer to the market. With marketing machinery farmer-owned and controlled, the producer has the means of getting the information needed to know what he can do to bring about some improvement and adjustment in production.

However, all coops have not been equally successful, in helping their members. We have noted some of the improvements in marketing and production which comes from cooperation. Granting the co-op is a good thing for the farmers, if well managed, will ours be a success or a failure? What are the principles followed by successful co-ops? Next week we'll look into these questions.

ANNOUNCEMENT: The principles followed by successful cooperative associations will be discussed this time next week. It will be the fourth talk in this series of sixteen in the possibilities of cooperative marketing. This series is presented by Station----- through a cooperative arrangement with the Federal Farm Board and the United States Department of Agriculture.

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YOUR FARM REPORTER AT WASHINGTON

Friday, June 20, 1930

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

Dairy Interview No. 40: PROFITS IN SELLING CREAM ON A QUALITY BASIS.

ANNOUNCEMENT: And now we present again Your Farm Reporter at Washington, who brings you today his weekly report on dairy farming. Your Reporter has been talking with Mr. William White, who is in charge of the division of dairy manufacturing of the Bureau of Dairy Industry, U. S. Department of Agriculture. Now he's going to tell you why, and how it pays to sell cream on a quality basis. All right, Mr. Reporter, what did you learn from Mr. White?

--ooOoo--

Mr. White did not waste time with generalities. He didn't tell me why buying and selling on a quality basis is profitable -- he showed me. He gave me the evidence in facts and figures -- and the evidence seems to be almost unanimous.

For instance, he cited this example. One farmer, who has 10 cows, markets low-quality cream which makes 87-score butter. The 10 cows average 250 pounds of butterfat a year, making 2,500 pounds for the entire herd. For this butterfat the farmer gets 41.2 cents a pound, which is about the average for a product that scores 87. Thus he received a total of \$1,030 from the 10 cows.

Now, another farmer has only 9 cows, which also average 250 pounds a year, and thus the herd produces 2250 pounds. But this farmer takes pains to send high-quality cream to market, which makes 93-score butter. For his butterfat he gets 45.8 cents a pound. And if you multiply 2250 by 45.8 you get a total of \$1,030.50, which is just 50 cents more than the farmer with one extra cow received for his 2,500 pounds of butterfat in low-quality cream. So, you see, high-quality cream from 9 cows brought as much money as low-quality cream from 10 cows.

By going to a little extra trouble this second farmer saved the investment on one cow, and he saved feed for one cow, space in the barn, labor of milking, and so on. And about all he did that the first farmer did not do, was to observe the rules of sanitation more thoroughly, to cool his cream promptly, and to deliver it more frequently.

Now, if the producer is to get any reward for his extra care, there must of course be some system of grading. He must be able to sell his cream on the basis of its quality. Otherwise the creamery gets the benefit of high-quality cream but the producer does not. The way it has actually worked out is that both farmer and creamerymen benefit when cream is bought on grade; and thus both are passing up opportunities for profit when they buy and sell

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1. The first part of the year was spent in the field, collecting specimens and making observations on the habits of the various species of birds and mammals.

2. The second part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations.

3. The third part of the year was spent in the field, making observations on the habits of the various species of birds and mammals.

4. The fourth part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations.

5. The fifth part of the year was spent in the field, making observations on the habits of the various species of birds and mammals.

6. The sixth part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations.

on the old one-price-for-all basis.

For example, the average price paid for butterfat is higher in Minnesota---where grading is well-established---than in some other Middle Western States where they still follow the one-price system.

But let's see how this has worked out in a specific case. Mr. White told me about an important cooperative creamery in one of the Southern states. This creamery has been in operation for several years before any effort was made to improve the quality of cream. The creameryman paid the same price for all cream, regardless of age, acidity, or degree of fermentation. Although they employed all the best manufacturing methods, their butter was always of low grade. Consequently they paid a low price for butterfat.

Then they sought the advice of dairy specialists of their State College and of the United States Department of Agriculture. And they decided to carry on a sort of cream-improvement program. They held meetings and demonstrations, and they had specialists demonstrate the latest methods of cooling and caring for cream, and of cleaning dairy utensils. Occasionally they would score the cream they received and send a copy of the scorecard to the patron who sold the cream.

However, all this was simply preliminary to the establishment of a grading system. In 1925 they began paying for cream according to grade---and then they began getting results. They set up three grades: premium, grade 1, and grade 2. The price for butterfat in premium and grade 1 cream was fixed at 3 cents a pound higher than that in grade 2.

Now, let's see what happened. In 1923, before they began their quality cream program, they received no cream at all that would grade premium or No. 1. In 1924 10 per cent was in the top grades. Then, in 1925, they began paying on the basis of quality, and more than 62 per cent of the cream they received graded premium and No. 1. By 1928 this percentage had increased to above 70.

And not only was the quality of premium and grade 1 cream increased, but, Mr. White says, the quality of all other cream was also greatly improved. In fact, he says, the butter made from the grade 2 cream is now of better quality than the entire output before grading was started.

Of course this was a fine thing for the creamery. They had to pay more for their cream, but they got more for their butter. In 1923 their butter was bringing them almost 3 cents a pound less than the prevailing market price at Chicago. But in 1928 they were getting almost two-tenths of a cent more than the Chicago market price. The creamery made 181,900 pounds of butter in 1928, and that means they received around \$5500 more for their butter than they would have received if the butter had been of the same quality as that made in 1923.

Yes, it was a fine thing for the creamery-----but it was an equally fine thing for the dairy farmers who sold their cream there. The creamery got more for its butter but at the same time the farmers got more for their cream. The average price of butterfat went up along with the increase in

quality of the creamery's butter.

This is just one example, but Mr. White says it is a typical one. The idea of buying and selling cream on grade is spreading --and it has spread pretty rapidly in the last few years. For outstanding big-scale results along this line we can look to Minnesota, but there are many such individual cases as the one Mr. White described.

Of course, some of us have gotten so used to the one-price system that it's often pretty hard to break away from it. It is usually more convenient to deliver cream once a week, rather than 3 or 4 times. However, under a grading system, dairymen are well paid for these extra trips to town. And many of them are getting around this inconvenience through cooperation. They take turns in hauling in each other's cream, thus avoiding special trips for the one purpose alone.

If you are interested in creamery problems, and in factors influencing the price a creamery can pay for butterfat, write for Miscellaneous Publication No. 37, called "Successful Operation of a Local Creamery." And I might remind you again of that bulletin on "Cooling Milk and cream on the Farm," Farmers' Bulletin No. 976-F. They're both free as long as the supply lasts.

ANNOUNCEMENT: That was Your Farm Reporter at Washington, discussing the profits that result from selling cream on a quality basis. The two bulletins he mentioned are "Successful Operation of a Local Creamery," Miscellaneous Publication No. 37; and "Cooling Milk and Cream on the Farm," Farmers' Bulletin No. 976-F. Send your requests to Station _____ or to the Department of Agriculture in Washington.

JUN 23 1930
U. S. Department of Agriculture

YOUR FARM REPORTER AT WASHINGTON

Monday, June 23, 1930.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

Livestock Interview No. 41 : PUT THE FLY TO FLIGHT THIS SUMMER

OPENING ANNOUNCEMENT: Flies, fleas, chiggers, and many another minion of Satan make tormentingly merry with men and animals at this season of the year. What to do? Your Farm Reporter at Washington has been trying to find out from the insect fighters of Uncle Sam, and now he's ready to report. Mr. Reporter.

--ooOoo--

Well, friends, the slapping and scratching season is here. Flies, fleas, plain and fancy bugs and beetles have sharpened up their jiggers, and are staking out locations on nice, fat calves, and swan-like necks, and getting ready for their summer feast.

I am reminded of the old-time medicine show gags. You remember? The interlocutor asks the end-man:

"How do you like bathing girls?"

"I don't know, I never bathed one," drawls the end-man.

And while the audience is practically faint from laughter at that, the interlocutor shouts another question:

"What is best to do about biting insects?"

"Quit biting them," is the sage reply.

Biting is really too good for them, I agree. There's something in the buzz of a mosquito about the burr of the ear that inspires murder in a man's heart, and calls forth a vicious slap at the tormentor. The drone of a fly will produce a swift snap from the laziest hound dog; when the insect choir starts its battle song placid old Bossy curls a switching tail over her back and sails off down the pasture in search of new hiding quarters.

Now, since most of us cherish all these unfriendly feelings toward the insect tribe, I have gathered in for all of us some facts on how to make life unhappy for our tormentors. Naturally I visited Mr. F. C. Bishopp, of the Federal Bureau of Entomology. Mr. Bishopp is in charge of the research on methods of foiling insects affecting man and animals. He's been at this job for more than a score of years.

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I couldn't decide what insects to start after first, so I put it up to Mr. Bishopp. He suggested a campaign, first of all, against flies. Now flies, he told me, are not all of the same family. Several distinct species annoy and endanger men and animals--among these the house fly, the stable fly, and the horn fly are of special interest and importance at this time of year.

The house fly you all know; well, but not favorably. Contrary to the opinions of most people it does not and cannot bite. If you think you have positive information it does bite, Mr. Bishopp suggests that you have mistaken the stable fly for the housefly. The stable fly looks like the housefly, and it is a hard biter.

The housefly breeds in decaying vegetation of all sorts, but especially in manure mixed with straw, and other almost unmentionable places. Like the housefly, the stable fly breeds in accumulations of manure; but it also develops in fermenting straw. An old straw stack, torn apart, trampled underfoot by livestock, and thoroughly wet by rain is an ideal breeding place for the stable fly. And the millions issuing from such places make life simply miserable for cattle and horses. "We have on record," Mr. Bishopp told me, "cases of animals being actually killed by the vicious attacks of these pests. Efficiency of work stock goes way below par in a bad fly season."

The horn fly is quite a little smaller than the house fly or the stable fly. It remains on cattle continuously, flying from one part of the animals to another in swarms when disturbed. It is a bloodsucker, but its bite is not so painful as the stable fly's. It breeds only in cow manure.

"Well," I commented to Mr. Bishopp. "Well, it looks as if we'd better take the pitchfork to the flies."

"Right," he replied. "They're all manure breeders. The practical thing to do is to scatter the manure on the pastures; scatter it regularly, once every three days. If the stockman can't do that, the next best thing is to store the manure in screened pits, provided with flytraps, and if the pit isn't available, rick manure in compact piles, keeping the sides as nearly vertical as possible.

"Now that will take care of the housefly and the hornfly. But to get the stable fly you have also to attend to the strawstacks. Build them carefully with vertical sides and top them out so as to turn rain. That will prevent deep wetting of the straw and following fermentation. A third precaution, --- this one is against horn flies, is to use a brush drag in the cow pastures.

"The use of fly sprays for the purpose of killing the flies on the livestock and around the barns is also a great help.

"Then, finally, set in a shady place some distance from your kitchen door at least one good fly trap, properly baited."

Mr. Bishopp went on to tell me about the traps, but I'll not try to give you details on that. However, I will name for you, at the close of my talk, a farmers' bulletin telling how to build and bait flytraps -- good practical farm flytraps.

While we were discussing flies, I asked Mr. Bishopp to give me directions for controlling that big, green-headed horsefly so familiar in many sections of the country.

"Well," he said, "some teamsters are so accurate with a whip that they can 'pop' a horsefly off the lead horse in a six-horse hitch, but I wouldn't recommend that as a practical control measure. Control horseflies as you control others -- destroy their breeding places. Drain and keep in cultivation the swampy places where they flourish.

"Now Mr. Bishopp, "I went on, "tell me about the bot flies."

"Oh, yes," he said, "that's a long story. There are a whole family of botflies. They are worse in some sections than in others, but they are found in nearly every part of the United States. Three different sorts of botflies attack horses. Another species causes sheep bots."

You owners of horses probably are familiar with the standard treatment for controlling horse bots, but if you haven't the U. S. Department of Agriculture's farmers' bulletin on the subject, I suggest that you get it. I'll give you its name and number later.

You may have guessed by now that my knowledge of entomology isn't all-embracing, to say the least. So don't be surprised, as Mr. Bishopp was, when I tell you that I asked him if bot flies cause "wolves" in cattle.

At that question, Mr. Bishopp looked me over, and said, "You were brought up in the South, weren't you?"

"Yes, I said, in Tennessee, How did you know?"

"Because southerners call an infestation caused by the HEEL FLY 'wolves'. It's called 'warbles' in the northeast and 'grubs' in the west.

"As I've said, it's caused by the heel fly. This fly costs cattle raisers more than \$50,000,000 a year, according to reliable estimates. Hides and calf skins alone are damaged to the extent of about \$2,500,000 a year by this trouble-maker."

Mr. Bishopp told me about the experience of one livestock feeder in Kansas whose cattle were docked 75 cents per hundred liveweight at the market because they were heavily infested with grubs.

Well, time flies, and I have time left only to conclude my report of my interview with the insect fighter by reminding you that control of insects begins with sanitation. For details of sanitation and of treatment for parasitic infestations caused by insects, I have to refer you to a number of Farmers' Bulletins published by the Department of Agriculture for your information. These have been written by Mr. Bishopp and men connected with his division of the Bureau of Entomology and will give you straightforward, practical directions for control of the insects we have been talking about today, and some others I didn't have time to report to you about.

Here is the list; note down the ones you wish to have in your business library and send your request to me:

THE HOUSE FLY AND HOW TO SUPPRESS IT -- Farmers' Bulletin No. 1408-F
THE STABLE FLY: HOW TO PREVENT ITS ANNOYANCE AND ITS LOSSES TO LIVESTOCK --
Farmers' Bulletin No. 1097-F
FLYTRAPS AND THEIR OPERATION -- Farmers' Bulletin 734-F
CONTROLLING FLIES AROUND THE DAIRY BARN -- Mimeographed Circular
MOSQUITO REMEDIES AND PREVENTIVES -- Farmers' Bulletin 1570-F
FLEAS AND THEIR CONTROL -- Farmers' Bulletin 897-F
CATTLE GRUBS OR HEEL FLIES (OR WARBLER OR WOLVES) WITH SUGGESTIONS FOR CONTROL --
Farmers' Bulletin No. 1596-F
THE HORSE BOTS AND THEIR CONTROL -- Farmers' Bulletin 1503-F

--ooOoo--

CLOSING ANNOUNCEMENT: Your Farm Reporter presents each day except Saturday and Sunday at this hour news of farm science and economics from the United States Department of Agriculture and the Federal Farm Board. Address him at this station or at the Department of Agriculture in Washington if you wish copies of the bulletins he offered today.

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YOUR FARM REPORTER AT WASHINGTON.

Tuesday, June 24, 1930.

Crops and Soils Interview No. 41:

Shifts in Farming.

ANNOUNCEMENT: Did you ever stand in your door and look out over your place? Maybe it is the same scene you've been seeing all these years. Maybe it is different. Maybe there are different kinds of crops growing over on this side. There have been changes some places. Your farm reporter at Washington has been to see a specialist of the United States Department of Agriculture. That specialist has pointed out the big changes you see when your mind's eye takes in this whole country of ours. ---- Got your eyes off those maps. Mr. Reporter, and tell us about 'em.

Dr. W. J. Spillman has just made a preliminary report on the shifts in farming in the United States since the World War. Dr. Spillman is in the Farm Management Division of the United States Department of Agriculture. He has worked out maps which show where our crops were being grown ten years ago, and where they have been grown in recent years.

When you compare these two sets of maps, you see how some of our main crops have shifted. You begin to realize how big and important some of those changes have been. Maybe you get considerable light on a lot of the troubles which we group under the name of the "farm problem." Lift your eyes from the changes you see around you, now, and let Dr. Spillman point out what has happened to our crops, by and large, over the whole country.

There has evidently been a general increase in crop farming in the West. Stating it roughly, low prices have forced many farmers in the East and South to leave more land out of crops. Low cost methods along the western edge of our Great Plains region, has led to putting more land in crops in that section. East of that new land, from Texas to the Dakotas and Montana, and taking in Iowa and parts of Minnesota, Illinois, and small areas to the eastward there is a stretch of country where land is generally level and farms are big. There, by using big teams, tractors and farm machinery, farmers have been able to stay in business in spite of low prices.

Farm conditions in the West and East seems to be much like two fellows under one blanket. West pulled the crop blanket his way. That left East looking around for other cover.

Dr. Spillman points out on his maps that a number of crops including wheat and cotton, corn and hogs, have moved over on the map.

Take hogs, for instance. Hog raising in this country in the last

ten years has spread northwest. That is, hog raising has decreased all through the territory lying south and east of the Corn Belt. It has increased to the northwest of what was the Corn Belt.

The Corn Belt itself has stretched northwestward. Even though conditions in the Northern Plains country are not altogether suited to corn, barley has helped out and the hogs seemed satisfied.

Or let's look at the westward and northward movement in cotton. That shift is due to prices, too. But the boll weevil was pushing from behind. Boll weevil damage in the Southeast cut cotton acreage there. It increased along the northern border of the Belt where it is too cold for the weevil and in the West where it is too dry for the boll weevil to thrive. Under the pull of prices and the push of the boll weevil, the cotton area west of Arkansas and Louisiana increased 62 per cent between 1919 and 1924. And along the northern border of the cotton country from Arkansas to Virginia, cotton acreage increased 30 per cent. The Cotton Belt that used to leave off in Texas out where the West began; now stretches from coast to coast, from southeast Virginia to southern California. In South Carolina, Georgia, and Florida, the cotton acreage decreased, 32 per cent, during the same time. But the shift in wheat acreage in the past ten to twenty years has been more marked than that of any other crop. As you recall, during the World War there was an enormous increase in the wheat acreage. Every part of the country which could raise wheat did its bit. A large part of the increase, however, was on land newly taken into cultivation, just for that purpose, along the western margin of the Plains region.

Five years ago we were about back to normalcy on wheat growing in the older wheat country. But there was that great expansion of wheat acreage in western Kansas and near-by parts of Oklahoma and Texas. That new country had apparently come into the wheat business to stay. So had Northern Plains States. In three great wheat-growing centers, wheat makes up over half the total crop acreage. Western Kansas and nearby parts of Oklahoma and Texas; North Dakota and Montana; and the Columbia River Basin form those three big wheat sections.

But we were talking about those two fellows in bed. It is plain to see in the case of cotton and wheat, that the crop blanket has stretched north and west. That leaves the other fellow to the south and east with less cover.

Farmers in the Southeast have tried to find some substitute for cotton. The cultivation of tobacco developed in eastern South Carolina and southern Georgia on a considerable scale. That led to too much tobacco. Some localities tried truck crops. But Dr. Spillman says it is out of the question for truck crops to become a general substitute for cotton in the Southeastern States. The area now planted to truck crops over the country generally is so big that production already often exceeds the market demand.

There are also several important feed and other problems to be solved before this region can make livestock the basis for farming. Parasites which infest cattle must be controlled. Some way of curing hay in wet years must be worked out. Better pasture for the uplands must be found.

Other sections have similar production problems, but in less degree. Dr. Spillman declares that practically no farm enterprise has maintained its status unchanged during the period covered by his report. He has maps showing

what changes have taken place in over twenty fields crops; in vegetables; in beef and dairy cattle, chickens, goats, horses and mules, sheep and swine; in fruits and nuts.

Although there have been no important shifts of fruit production from one locality to another in recent years, the fruit maps show enormous increases and decreases in acreage in many of our widely scattered fruit sections.

Those big ups-and-downs in fruit acreage make fruit growing entirely too risky. Dr. Spillman points out that the stabilization of acreage of all the fruits is a pressing problem which will take a lot of research to solve. We don't yet know the actual acreage and average yields of each kind of fruit, nor the length of non-bearing and bearing life of each in the different producing sections. We don't know the market requirements, or how much we should increase the acreage of each fruit each year.

We have just touched here and there in Dr. Spillman's report. But those maps certainly help up picture what has happened in farming these recent years, and why some things are as they are.

ANNOUNCEMENT: Your Farm Reporter at Washington has just called our attention to some of the shifts in farming in the United States. This is one of the regular series presented by Station -----in cooperation with the United States Department of Agriculture. We will have another of these reports tomorrow at this same time.

My dear Mr. [illegible]

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JUN 25 1930 ★

U. S. Department of Agriculture

Wednesday, June 25, 1930

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In 340
YOUR FARM REPORTER AT WASHINGTON

NOT FOR PUBLICATION

Speaking Time:

Poultry Interview No. 41.: TREATMENTS FOR EXTERNAL PARASITES

ANNOUNCEMENT: At this time we hear again from Your Farm Reporter at Washington. Today Your Farm Reporter brings you a report on those hot-weather trouble-makers which we classify under the general head of internal parasites. He tells you about his interview with Mr. J.L. Webb, Department of Agriculture specialist on insects which affect man and animals. All right, Mr. Reporter.

To really begin at the beginning, we'd have to go back and give some attention to good housing, and sanitation, and proper ventilation and so forth. These things can't be depended upon to control lice and mites, but Mr. Webb emphasizes the fact that they are very important steps in control.

For one thing, they help the poultryman to determine when these pests are present. And strange as that seems to me, Mr. Webb told me it would not seem strange at all to you poultry raisers. As you may have found, the presence of mites is often not detected until they attract attention by causing irritation on the human body as well as on the poultry.

There's some question about which of the external parasites causes greatest losses to the poultry industry. But I gather that lice and mites are the two most important, because they occur in practically every locality in the country where poultry is raised. Thus, by reducing egg production, hindering growth, and reducing the quality of flesh, they cause tremendous losses---much greater perhaps than we usually think. The fowl tick, or "blue bug," and the sticktight flea are also very serious pests, but they are not so widespread.

I asked Mr. Webb to tell me the best ways science has found of combating these insect parasites. He began with mites.

First, he said, you can usually tell when mites are present from the small areas on boards specked with black and white, as though dusted with salt and peppers. This is the excrement of the mites, which are hiding in adjacent cracks or rough places. If you'll examine more carefully you'll find masses of mites in hiding, together with their eggs and the silvery skins cast by the young.

The common poultry mite of course lives by sucking blood from the fowls it attacks. In poultry houses where there is only a moderate number of mites the injury to the fowls may not become evident for quite a while. However, the constant loss of blood and irritation are taking their toll in decreased egg production and in poor condition of flesh.

Now, mites aren't hard to kill, but the great difficulty is in reaching them. They secrete themselves in cracks and crevices during the day-time, and that's why applying dust baths to chickens is not an effective treatment. The first step necessary to destroy mites is to get rid of their hiding places, as far as possible. Take down the roosts and remove all unnecessary boards and boxes. And then spray. The chemical known as carbolineum probably makes the most effective spray, but crude petroleum is also good, and in most localities it is very cheap.

If it is more convenient, crude petroleum and carbolineum may also be applied with a brush---to nesting boxes, coops, roosts, roof, or wherever mites are apt to hide. The main thing is to get the oil into every little crack and crevice that may harbor the mites.

After the first application Mr. Webb says it is usually best to put in new roosts, especially if the old ones furnish many hiding places. He suggests putting in simplified types of roosts which will make it easy to control the mites. I can't tell you much about these roosts over the radio, but can get all the necessary information in Farmers' Bulletin 801, called "Lice and Mites on Poultry."

Carbolineum and crude petroleum, by the way, are also effective treatments for the blue bug---and also for the bed bug, which Mr. Webb says sometimes infects poultry houses. The blue-bug has blue-bug about the same habits as the common mite, but it is harder to destroy. However, a good application of carbolineum or crude petroleum put on about every 30 days during the summer and early fall should get results.

Now there are several other kinds of mites which give trouble in various parts of the country. Among them are the feather mite, the chigger or harvest mite, and the scaly-leg mite. My time is limited, however, so I'm going to refer you again to that Farmers' Bulletin No. 801. It takes up all of these treatments in detail.

Now we come to lice. There are some 40 species found on domestic fowls, and chickens are infested by more kinds than any other fowl. Seven species are commonly found on chickens, four or five on pigeons, two or three each on geese and ducks, three on turkeys, and several each on guinea fowl and peafowl.

However, the same treatments are generally effective against all types. Sodium fluoride has been the standard treatment for years, and if it is properly applied it is remarkably effective.

"There is no real reason," Mr. Webb declared, "why a poultry flock should not be entirely freed from lice, and maintained in this condition.

"One application of sodium fluoride to all fowls on a given premises will completely destroy all lice present," he said. "The treatment must be

thorough, however, and every fowl must be treated. Otherwise it will take only a short time for even one infested chicken to reinfest the whole flock."

Sodium fluoride may be applied either as a dust or as a dip. But in either case the first step is to see that all the fowls are shut in the poultry house or placed in coops before you begin the treatment.

Remember that sodium fluoride is poisonous to man, hence it should not be left where it might be used by mistake in food or as medicine.

Now, just a word about fleas. To fight fleas, the first thing is to clean up the premises thoroughly. Keep chickens from getting under outbuildings. And then spray the soil under infested buildings with creosote oil.

And to wind up with, here's a warning. If anyone tries to sell you an internal medicine which he claims will kill external parasites, look upon him with suspicion. The Department of Agriculture has conducted extensive tests, and they have found no internal remedy that is effective for fighting lice, mites, fleas and similar pests. In fact, some of these remedies they tried are apt to do more harm to the chickens than to the parasites. At best such remedies are generally useless and they may be dangerous.

Now let me call your attention to several other bulletins that will give you more complete information on external parasites. There is Farmers' Bulletin No. 1337, called "Diseases of Poultry"; Farmers' Bulletin No. 1070, called "The Fowl Tick and How Premises May be Freed of It"; and Technical Bulletin No. 60, entitled "Ineffectiveness of Internal Medication of Poultry for the Control of External Parasites."; and Farmers' Bulletin No. 897, "Fleas and Their Control."

ANNOUNCEMENT: That was Your ^{Farm} Reporter at Washington, reporting his interview with Mr. J.L. Webb of the Department of Agriculture on "Treatments for External Parasites." I'll read over that list of bulletins he mentioned, in case you missed any numbers. Here they are: "Mites on Lice and Poultry," Farmers' Bulletin No. 801; "Diseases of Poultry," Farmers' Bulletin No. 1337; Farmers' Bulletin No. 1070, "The Fowl Tick,"; "Fleas and Their Control," Farmers' Bulletin No. 897; and "Ineffectiveness of Internal Medication of Poultry for the Control of External Parasites," Technical Bulletin No. 60. You may secure copies of these publications, while the supply lasts, by writing to Station _____ or to the Department of Agriculture in Washington.

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In 380
YOUR FARM REPORTER AT WASHINGTON.

Thursday, June 26, 1930.

POSSIBILITIES OF COOPERATIVE MARKETING:

Talk No. 4: Principles Followed by Successful
Co-operative Associations

ANNOUNCEMENT: We are having a series of sixteen talks on the possibilities of cooperative marketing. As you know, these possibilities are being revealed to us by the specialists of the cooperative marketing division of the Federal Farm Board. They come to us through your farm reporter at Washington. We have already presented three of these sixteen. Now we will have the fourth in the series ----- Go ahead, Mr. Reporter -----

As we have heard, cooperative marketing has possibilities of being a big help, in solving our farm problem. Co-ops can bring about improvement, in both marketing and production. Of course, a lot depends on how successful the co-op does its job.

Mr. A. W. McKay, chief of the cooperative marketing division, of the Federal Farm Board, points out that many coops have been successful. Others, he says, have been partly successful. Others, he admits, have completely failed.

Any of us planning to have a farmers' cooperative association, naturally want to know how the successful ones get that way. Mr. McKay answers us by listing an even half dozen things which he has found to be true of the inner-workings of success in farmers' co-ops.

The successful co-ops; first, fill a real need. Second, they are soundly organized. Third, they are supported by their members. Fourth, they improve grading, handling and marketing methods. Fifth, they handle a large enough volume of business. And sixth, they have efficient management and financial stability.

Now, let's let Mr. McKay go into these six principles of success a little further.

First, Is there a real need for an association? Is there a service it can perform? If so, what are the needs and services? Is our crop being handled and marketed efficiently under present conditions? Are local handling charges reasonable?

Many dealers may be handling our stuff. Each must make a living. Taken together, their overhead costs may be much bigger than we would have if we had one big overhead marketing organization. Or, we may not be getting

the full value for our products we would get if properly graded and sold on a quality basis.

However, granting that there is a real need for an association, to be successful, it must be soundly organized. Mr. McKay says that successful associations have provisions in their articles of incorporation which safeguard the cooperative features of the business. They provide that the directors be elected by the members. They limit the control one member or any one group of members can exercise on the association, and limit the amount of dividend to the usual rate of interest.

In general, they follow the Capper-Volstead law which provides that such an association shall be organized for the mutual benefit of its members, and either on the principle of one-man-one-vote or dividends on capital stock are limited to not over eight per cent. And, of course, the successful association is well organized from a business point of view. It is set up to do the thing for which there is the greatest need. It is adapted to the product and to conditions.

Soundly organized to meet a real need, the successful farmers' co-op has also been the one which has the support of its members. As Mr. McKay says, the successful association is guided and supported by its members. It is managed with a view to giving the members the greatest possible service. It gives to its membership full information about the working of the association. The successful association sees to it that its members have an opportunity to discuss any important change of policy, before such a change is put into effect.

In other words, the farmers' organization which has proved most productive of results is not the one controlled by one man, or by a little group of in-siders. The successful associations have been managed in the interest of all their members.

Mr. McKay is very emphatic about this. From his study of co-ops from one end of this country to the other, he insists that success depends more upon the part members take in the organization than on any other one thing. If the members are indifferent or uninterested, one man or a few men can divert the association to their own ends. The chances of success are reduced.

Remember now, analysis of successful co-ops in the past has shown that they fill a real need, have a sound organization, and get the support of their members. Those are three of the six principles which we may use as a sort of rough framework for a model of a farmers' cooperative marketing association.

Now, let's follow Mr. McKay on the other three of these six principles. He says the successful associations have improved grading and handling. By the establishment of standard grades, they have been able to stabilize and increase the demand for their stuff. Then by pooling the returns and paying according to the quality or grade delivered by the members, they have improved production. In other words, they have taught their members to adapt production to the needs and demands of the market.

Tied up with this question of standardization, and grading, and handling, is the question of volume. The successful association has big enough volume of business. By "big enough" we mean big enough to lower costs in handling, and introduce economics not possible where stuff is handled in small quantities. Also we mean big enough to give enough income to enable the co-op to make improvements in handling and marketing practices.

The soundly organized and well-supported association which fills a real need, improves the grading and handling of the stuff supplied by the member-farmer, and handles big enough quantity of the product to enable it to make improvements, must have yet another thing, to long stay in the ranks of successful co-ops.

The successful association must have efficient management and financial strength. The needs for capital vary. Some associations have to operate plants. Others have very small overhead expense. Any association needs enough capital to do the particular job it has undertaken.

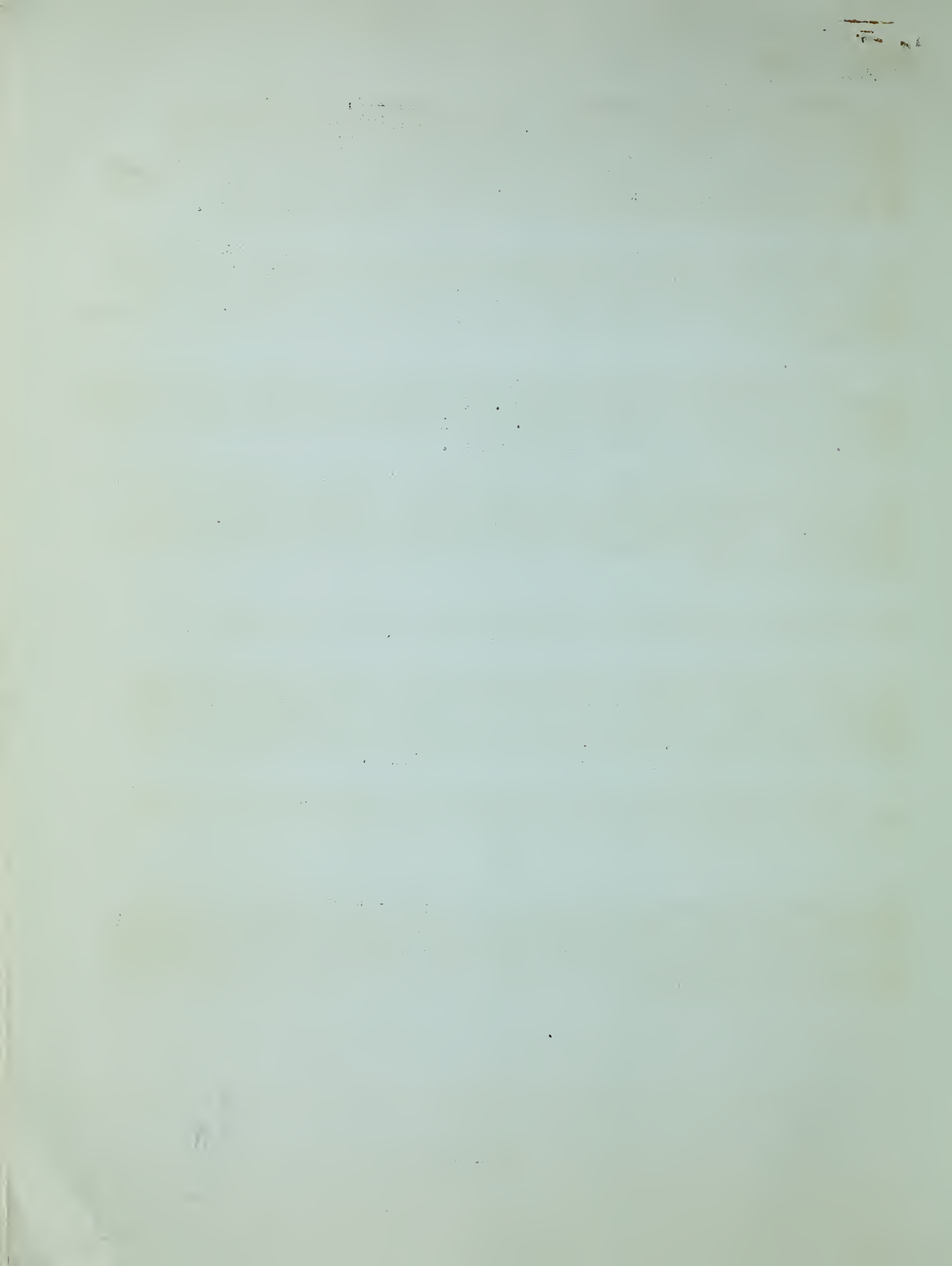
Some of the successful associations had to start on little capital. But a co-op should have enough to provide for the necessary fixed and working capital. The successful association provides right at the start for the accumulation of needed reserves. That is, it sets aside funds against the proverbial rainy day.

In this connection, Mr. McKay points out that the successful co-op keeps records. Its policies are based on facts, not on guess-work.

Let's remember these six principles which have been followed by our successful co-ops. First, they fill a real need. Second, they are soundly organized. Third, they are supported by the members. Fourth, they improve grading and handling. Fifth, they handle enough business, and Sixth, they have efficient management and financial stability.

And now that we have seen what makes for success, next week we will look into the question of why some farmers' co-ops fail.

ANNOUNCEMENT: "Why some cooperatives have failed" will be the subject for discussion next week. That is the next in this series of sixteen viewpoints on the possibilities of cooperative marketing. Station----- is presenting this series in cooperation with the Federal Farm Board and the United States Department of Agriculture.



JUN 28 1930

U. S. Department of

Friday, June 27, 1930.

1.9
In 340
YOUR FARM REPORTER AT WASHINGTON

NOT FOR PUBLICATION

SPEAKING TIME: 10 Minutes.

Dairy Interview No. 41: PROTECTING MILK DURING TRANSPORTATION.

ANNOUNCEMENT: And now we again present Your Farm Reporter at Washington. In view of the interest in producing higher quality milk we've asked Your Reporter to get us some information on protecting milk during transportation. He has interviewed Mr. R. P. Hotis, of the Bureau of Dairy Industry, and today he tells you what Mr. Hotis told him. All right, Mr. Reporter.

--ooOoo--

The whole business of producing high quality milk is a matter of good economics. It pays in dollars and cents. And this is the basis on which Mr. Hotis talked to me about being careful to protect milk after it leaves the farm.

He began with cooling, which of course is at the bottom of any high-quality milk program. He said that we cool milk chiefly for three reasons:

First, to maintain the quality of milk.

Second, to meet the rules and regulations of cities and milk companies.

And third, to make milk more palatable. Cool milk is much more pleasing to the consumer.

Now, he went on, it costs money to cool milk. It takes ice, and it takes equipment, and it takes labor. Of course it is a good investment; otherwise, nobody would go to this trouble and expense.

But the point is that the lower the cooling temperature the greater the cost. That is, it costs more to cool milk to a temperature of 35 degrees than it does to cool to 40 degrees, and so on.

Now, the question comes up: To what temperature do you have to cool your milk in order to get it to market at the proper temperature?

Say, for instance, that your market requires milk at a temperature not higher than 50 degrees. Now, perhaps you are able to come under this deadline by cooling down to 45 degrees before sending it to town. On the other hand, one of your neighbors may have to cool his milk to 40 degrees in order to get under the wire. If that is the case, you are saving money. And the saving is due to

greater care in transportation, or to being more favorably located on the route.

So, says Mr. Hotis, when you take pains to protect milk on its way to market, you are not only protecting the quality of your product, but you are protecting the investment you put into the process of cooling.

"Now just what do you mean by protecting milk?" I asked Mr. Hotis. And here are his suggestions as I jotted them down while he talked.

First, take milk that is left at the roadside to be picked up by a truck. In summer it must be protected from the sun and in winter from low temperatures. Of course the care you have to use depends somewhat upon climatic conditions, but in general here are some of the most common methods:

Place the milk in the shade, or under the shelter of a roof made of canvas or some other kind of material.

Put it in this protected spot, as near as possible to the time the hauler makes his regular appearance.

Put a few 5-pound or 10-pound chunks of ice on top of the cans.

In winter, protect it with a heavy blanket. And use the blanket for this one purpose only.

Now, where hauling on the road takes more than half an hour, see that the milk is protected with a blanket or canvass during transportation. In extremely hot weather, it is usually necessary to wet the covering and to scatter a few small chunks of ice on top of the cans under the canvas or blanket.

Of course even greater precautions are necessary for longer hauls. When the milk is to be on the road for three hours or more, the trucks which take it to market should be tightly boxed, and preferably insulated. And even under these conditions, chunks of ice scattered over the tops of the cans is a good precaution in extremely hot weather.

Cans of milk shipped in baggage cars need to be jacketed.

To illustrate the importance of these practices, Mr. Hotis gave me a concrete example.

Four 10-gallon cans of milk cooled to 44 degrees were hauled a distance of 13 miles from a farm to a railroad station, he related. One can was insulated a second was an ordinary unprotected can covered with a 1-inch felt jacket, the third was covered with a one-half inch felt jacket, and the fourth was entirely unprotected. During the 13-mile trip to the railroad station the milk in the insulated can rose 1 degree, the milk in the cans protected by jackets rose 6 degrees, and the milk in the unprotected can rose 20 degrees.

Then, the cans were shipped in an ordinary baggage car for more than 1,000 miles, at an average air temperature of about 80 degrees. In the unprotected can the milk reached a temperature of 60 degrees before it arrived at the railroad; the milk in the can with a half-inch jacket reached 60 degrees after about 268 miles of travel; the can with the 1-inch jacket traveled about 332 miles before the milk reached 60 degrees; and the milk in the insulated can did not reach 60 degrees until after 650 miles of travel.

Thus, simply by using a half-inch jacket it was possible to ship an individual can of milk 26 times as far as in the ordinary can before the temperature rose to 60 degrees; 33 times as far with the 1-inch jacket; and 65 times as far in the insulated can.

When we remember that milk sours very rapidly at high temperatures, the importance of this protection is easy to realize. However, it is still a fact that a large part of our annual loss from sour milk is due to shipping milk at too high a temperature, and this loss is estimated to be many millions of dollars.

The first thing, of course, is cooling on the farm. But cooling may not help much if milk is allowed to go to market without sufficient protection.

You'll find some helpful tips on this question in that well known Farmers' Bulletin No. 976-F, called "Cooling Milk and Cream on the Farm." Write for it in care of Station _____ or to the Department of Agriculture in Washington.

--ooOoo--

ANNOUNCEMENT: That was Your Farm Reporter at Washington, reporting his latest interview on "Protecting Milk During Transportation." Your Reporter will be back at the microphone Monday at this same hour, for his weekly talk with livestock men.

JUN 30 1930

U. S. Department of Agriculture

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In 340
YOUR FARM REPORTER AT WASHINGTON.

Monday, June 30, 1930.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

All Regions.

IS IT SAFE TO USE ANTI-HOG-CHOLERA SERUMS?

OPENING ANNOUNCEMENT: "Is it safe to use anti-hog-cholera serums?" That's the question Your Farm Reporter is going to try to answer to-day. That's a timely subject in many sections of the country at this season of the year, so we'll pass over the "mike" and let the reporter start his program.

--ooOoo--

Folks, I want to talk to you again to-day about locking the stable door before the horse is stolen. This talk was prompted by a hog raiser in the central part of the United States. He has used anti-hog-cholera serums very successfully for a number of years and wouldn't think of trying to go through an outbreak of hog cholera without immunizing his hogs.

The hog raiser I am talking about lives in one of the best farming sections under the Stars and Stripes; he is surrounded with progressive neighbors-----and they still make money farming in that section of the country. However, this particular hog raiser has written in and raised a question which I think is well worth discussing at this season of the year. It appears that some of his neighbors are still a little bit skeptical about the use of serum and virus in the treatment to prevent hog cholera. They want to know if these products are really safe, and how a farmer is to know when they are safe.

When I finished reading that hog raiser's letter, I grabbed my hat and headed straight for the office of Dr. D. I. Skidmore, chief of Uncle Sam's office of virus and serum control. Dr. Skidmore has been working for Uncle Sam for more than a quarter of a century, and has more than 100 people helping him to see that farmers and livestock producers get good, clean, pure serums and vaccines for combatting various livestock troubles.

I passed the hog raiser's letter over to Dr. Skidmore, and watched the expression on his face as he read down the page. As he finished, he adjusted his glasses, and then said----

"Yesterday, a highway accident in my home State of Ohio injured nearly a dozen people. In less than two hours after the accident an airplane from one of the Government-supervised serum plants at Woodworth, Wisconsin, was on its way to the scene of the accident---loaded with a serum used to prevent what is commonly called ----- lockjaw.

"If the serums and vaccines that are made under Uncle Sam's supervision are good enough to be used on people-----they are certainly good enough and safe enough to be used on animals."

That statement drove home the fact and then clinched it so that it wouldn't pull out. Continuing, Dr. Skidmore said,

"There are now 84 commercial plants under the supervision of the Federal Government, in this country making serums, aggrässins, tuberculin, bacterins, and vaccines for veterinary use. Fifty-two of these 84 commercial plants manufacture anti-hog-cholera serum under the supervision of the United States Bureau of Animal Industry, while 39 of them are making other biological products of the various kinds mentioned and these also are under our supervision."

"Just how do you supervise these plants and these products?" I asked.

"Well," he said, "we always keep a man at the plant where the more important products are made. In other cases our men make periodic inspections of the plant and the products. Uncle Sam, you know, has ways of checking and double checking, and he's always on the lookout when it comes to the manufacture of serums, vaccines and other such biological products."

At this point, I said, "Dr. Skidmore, what do you do if you find a plant making an inferior product?"

"We find the cause," he said. "If it was accidental, we give them another chance and caution them to be careful. If it was on purpose, and if we know it was-----we can take their Federal license away from them and they have to stop manufacturing such products."

"Have you ever revoked any licenses?" I asked.

"Oh, yes," he answered, "but in the main our manufacturers are honest, and their products are reliable."

That brought me to the very point I wanted, so I shot in my next question before we switched to something else. Here's what I asked-----

"How can a farmer tell when these products are safe and reliable?"

"READ THE LABEL ON THE CONTAINER," was his positive answer.

"Dr. Skidmore," I asked, "what is anti-hog-cholera serum made of?"

"The serum," he said, "is made from the blood of hogs known to be highly immune to hog cholera. Then this product is prepared by licensed establishments and pasteurized, it is a safe product to use, and if properly administered at the right time, will protect pigs and hogs against hog cholera."

I asked if there are any new methods or improvements in the production of anti-hog-cholera serum.

"Yes," said Dr. Skidmore. "The latest improvement not only clarifies the product but pasteurizes it before it is placed on the market. The serum bottles are filled and sealed, then completely submerged in a water bath, and at the same time the serum is agitated to bring all parts of the mixture to the proper pasteurizing temperature. This new process destroys any disease-producing bacteria that may be present and improves the keeping quality of the serum by destroying other bacteria.

"Of course, the clear serum has many advantages over the cloudy serum. In the first place it keeps better. In the next place it is concentrated and in equal volume will go further, and finally, clear serum is more easily made safe, works better and will not clog a syringe like the old serum. Naturally all these are important items in favor of the improved serum."

Anti-hog-cholera serum is prepared in large quantities, and used by many different individuals, and under varying conditions. However, there is no biological product made that is used either for man or animals with such uniformly satisfactory results as anti-hog-cholera serum. That is the best answer that I can give to the question--- IS IT SAFE TO USE ANTI-HOG-CHOLERA SERUM?

According to Dr. Skidmore's records there was enough serum produced in 1929 to immunize about 19 million hogs. That figure represents nearly 30 per cent of the total pig crop.

By examining the label of each container of serum one can readily tell where it was made, and whether it is concentrated clear serum or some other kind. A dose table is also required to be printed on the label, but it is generally better to have a veterinarian determine the proper quantity of serum for pigs of various sizes.

This ended my interview with Dr. Skidmore, who is an authority on the preparation of serums and viruses. As I started to leave his office, he handed me a copy of a circular entitled---COMPARATIVE VALUES OF TYPES OF ANTI-HOG-CHOLERA SERUM. This publication is known as Circular No. 11-C, and you may have a copy of it by writing to the United States Bureau of Animal Industry, Washington, D. C.

Thousands of spring pigs have already been immunized against hog cholera. Immunization is a safe process. If there is an outbreak of cholera in your section-----let me suggest that you get in touch with your county agent, or your local veterinarian-----and to reverse the old adage, lock the stable door before the horse is stolen. Farmers' Bulletin No. 834-F, called "HOG CHOLERA," will give you plenty of information relative to hog cholera and its treatment.

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CLOSING ANNOUNCEMENT: You have just listened to one of the regular Farm Reporter programs broadcast from Station _____ in _____ in cooperation with the United States Department of Agriculture. Write this station for copies of the publications mentioned in this talk.

